Final
Remedial Investigation Work Plan
Boeing Developmental Center
Tukwila, Washington

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Prepared for

The Boeing Company

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LIST OF ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter
AOC	Area of Concern
AST	aboveground storage tank
bgs	below ground surface
BMP	best management practice
Boeing	The Boeing Company
BTEX	benzene, toluene, ethylbenzene, xylenes
CALIBRE	CALIBRE Systems, Inc.
CAP	Cleanup Action Plan
cDCE	cis-1,2-dichloroethene
CSO/SD	combined sewer overflow/storm drain
CSM	Conceptual Site Model
CUL	cleanup level
DAHP	Washington State Department of Archaeology and Historic Preservation
DC	Developmental Center
DOC	dissolved organic carbon
Ecology	Washington State Department of Ecology
E-M	electromagnetic
EPA	US Environmental Protection Agency
ESA	environmental site assessment
FS	feasibility study
ft	feet, foot
ft/day	feet per day
ft/ft	feet per foot
ft^2	square feet
ft^2/min	square feet per minute
ft^3/s	cubic feet per second
GPR	ground-penetrating radar
HASP	Health and Safety Plan
IAWP	Interim Action Work Plan
ISGP	Industrial Stormwater General Permit
LAI	Landau Associates, Inc.
LDW	Lower Duwamish Waterway
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
NFA	No Further Action

LIST OF ABBREVIATIONS AND ACRONYMS (CONT'D)

NPDES ..... National Pollutant Discharge Elimination System
PAH ..... polycyclic aromatic hydrocarbon
PBDE..... polybrominated diphenyl ether
PCB..... polychlorinated biphenyl
PCE ..... tetrachloroethene
PCOC ..... potential contaminant of concern
PCUL.....preliminary cleanup level
POC ..... point of compliance
PPC.....Project Performance Corporation
PQL..... practical quantitation limit
QAPP ..... Quality Assurance Project Plan
RCRA .....Resource Conservation and Recovery Act
RCW ..... Revised Code of Washington
redox..... reduction-oxidation
RFA..... RCRA Facility Assessment
RI..... remedial investigation
SAIC.....Science Applications International Corporation
SAP .....Sampling and Analysis Plan
SVOC .....semi-volatile organic compound
SWMU .....Solid Waste Management Unit
SWPPP.....stormwater pollution prevention plan
TCE .....trichloroethene
TEE .....Terrestrial Ecology Evaluation
TMCL ..... target media cleanup level
TOC .....total organic carbon
TPH.....total petroleum hydrocarbons
TPH-D ..... diesel-range total petroleum hydrocarbons
TPH-G .....gasoline-range total petroleum hydrocarbons
TPH-O.....oil-range total petroleum hydrocarbons
TSS..... total suspended solids
USACE..... US Army Corps of Engineers
USGS..... United States Geological Survey
UST.....underground storage tank
VC..... vinyl chloride
VCP.....voluntary cleanup program
VOC ..... volatile organic compound
WAC ..... Washington Administrative Code
Windward.....Windward Environmental

1.0 INTRODUCTION

This document presents a work plan to conduct a remedial investigation (RI) at The Boeing Company's (Boeing) Developmental Center (DC) in Tukwila, Washington (site; Figure 1). The DC is a regulated facility under the Resource Conservation and Recovery Act (RCRA) with a facility identification number of WAD-09363-9946. A facility map is presented on Figure 2. The Washington State Department of Ecology (Ecology) is authorized by the US Environmental Protection Agency (EPA) to implement RCRA corrective action through its Model Toxics Control Act (MTCA) regulation.

Boeing has performed extensive prior investigations and interim remedial actions at the DC. This work has been performed under Ecology's Voluntary Cleanup Program (VCP) since 2002 and is incorporated into the RI. Future work will continue under the new Agreed Order No. DE 16275 issued for the DC on July 23, 2019, per the Interim Action Work Plan (IAWP; Landau Associates, Inc. [LAI] 2019a), and per this RI work plan. Interim action has been performed in Area of Concern (AOC)-05, Solid Waste Management Unit (SWMU)-17, and SWMU-20 (Figure 3). Site stormwater will not be addressed in this work plan; stormwater treatment requirements are specified in Agreed Order No. 15600.

This RI work plan was prepared by LAI on behalf of Boeing and was developed to meet the general requirements for an RI as defined by Ecology MTCA cleanup regulations (Washington Administrative Code [WAC] 173-340-350). This work plan describes the site-wide RI activities to be performed and the planned schedule for data collection, evaluation, and reporting. This work plan includes a Sampling and Analysis Plan (SAP; Appendix A), a Quality Assurance Project Plan (QAPP; Appendix B), and a Health and Safety Plan (HASP; Appendix C), which will govern ongoing RI work.

1.1 Overview of Prior Investigations

A number of site evaluations, environmental investigations, and cleanup actions have taken place at the DC since the 1980s. These investigations previously identified surface and subsurface contamination at the site, including the following:

- Petroleum hydrocarbons in soil and groundwater
- Volatile compounds related to petroleum hydrocarbon releases in soil and groundwater
- Polychlorinated biphenyls (PCBs) in soil, building materials, and the stormwater sewer system
- Chlorinated solvents in soil and groundwater
- Polycyclic aromatic hydrocarbons (PAHs) in groundwater
- Metals in soil and groundwater.

These prior investigations were generally focused on a specific AOC or SWMU, or on other areas of suspected releases at the site and are incorporated into the RI. Prior investigations are summarized in this work plan and data are presented in Appendices D, E, F, G, J and K.

The results of prior investigations and cleanups were compared to screening levels and previously proposed cleanup levels (CULs). Preliminary soil and groundwater screening levels were developed in 2002 (LAI 2002b) based on MTCA Method C CULs for soil and MTCA Methods A and B CULs for groundwater. In 2013, preliminary screening levels for groundwater were replaced with proposed CULs based on Boeing Plant 2 target media cleanup levels (TMCLs; LAI 2013). Indoor air proposed CULs were also developed in 2013 based on Plant 2 TMCLs for industrial/worker exposure. This work plan adopts updated screening levels for the RI to replace prior screening levels and proposed CULs, as described in Section 5.0.

1.2 Additional Investigation for Completion of the RI

Additional investigation into historical areas of interest and new areas of interest will be performed to complete the RI and resolve identified data gaps remaining following prior investigations. Additionally, the RI will evaluate potential human and environmental receptors and potential pathways to receptors. Findings will support recommendations for potential interim measures, the completion of the feasibility study (FS), and the development and implementation of a Cleanup Action Plan (CAP). Implementation of the CAP is intended to achieve a No Further Action (NFA) determination by Ecology for the DC.

Additional investigation of subsurface soil and groundwater will be performed to completely characterize the nature and extent of contamination at each of the identified investigation areas. Additional investigation will be performed in areas that were identified as data gaps during previous investigations and/or where additional investigation was requested by Ecology. Further investigation will be performed in the areas discussed in Section 6.0 and shown on Figure 3.

RI activities will include the following:

1) Site reconnaissance to confirm the presence/locations of existing monitoring wells and evaluate their suitability for sampling.
2) Utility investigation work.
3) Collection and analysis of groundwater samples from existing monitoring wells. Redevelopment of existing monitoring wells, as necessary.
4) Collection and analysis of soil and/or groundwater samples from direct push borings in select investigation areas.
5) Ground surface elevation and location surveys of all new borings drilled as part of this plan. Collection of other geospatial information deemed pertinent during the execution of the plan.
6) Collection and analysis of grab samples from each of the identified groundwater seeps along the DC facility boundary.
7) Collection and analysis of grab samples from areas of identified bank erosion along the DC facility boundary.
8) Additional phase(s) of investigation based on evaluation of initial RI data.

Preliminary locations for the seep grab samples and soil and groundwater grab samples are identified in this work plan and discussed further in the SAP (Appendix A). Boring locations may be adjusted based on the findings of the utility investigation work.

2.0 SITE DESCRIPTION AND BACKGROUND

This section describes site features, current and future land and water use, and historical site uses.

2.1 Current Site Features

The DC (site) is located at 9725 East Marginal Way South in Tukwila, Washington near Boeing Field and the Military Flight Center (now called the Military Delivery Center; Figure 2). The site is bounded by the Lower Duwamish Waterway (LDW) on the west and south, by East Marginal Way South on the east, and by the Museum of Flight and Slip 6 on the north. The site is at an average elevation of approximately 20 feet (ft) above mean sea level. Surface topography at and in the vicinity of the DC is generally flat. The site and surrounding area are paved.

The DC is an aircraft and aerospace research and development complex, primarily supporting projects for the US Department of Defense. The facility currently consists of more than 30 buildings on approximately 117 acres. It continues to be the primary research and development center for carbon fiber composite structures.

2.2 Current and Future Land Use

Land use surrounding the DC is primarily industrial and commercial, while the site itself is zoned for heavy industrial use. The DC is located within a large contiguous industrial land use area that extends from the navigational head of the LDW to Harbor Island, where the LDW discharges to Elliot Bay. This region represents one of the largest contiguous industrial areas within the State of Washington. Future land use is anticipated to be industrial operations and/or commercial activities, consistent with current zoning and site use.

2.3 Current and Future Groundwater Use

Groundwater at the DC is not a current or potential future source of drinking water, as it meets the non-potable groundwater definition in WAC 173-340-720(2). Per the code, “even if groundwater is classified as a potential future source of drinking water under…this subsection, [Ecology] recognizes that there may be sites where there is an extremely low probability that the groundwater will be used for that purpose because of the site’s proximity to surface water that is not suitable as a domestic water supply.” The LDW adjacent to the DC is not suitable as a domestic water supply, as it is composed largely of marine surface water with an overlying layer of freshwater. Furthermore, the LDW is a listed Superfund site and undergoing extensive cleanup activities unrelated to the DC. The location of the DC relative to the LDW allows site groundwater to be classified as non-potable for the purposes of the code if certain conditions can be demonstrated. These conditions are met at the DC, as follows:

- **The groundwater does not serve as a current source of drinking water (WAC 173-340-720[2][a]).** There are no known municipal or domestic water wells within at least 0.5 miles of

the DC.[1] Two municipal supply wells are located approximately 0.75 miles west and 1 mile south of the DC, respectively. These wells are located on the opposite side of the LDW from the DC and on the West Seattle Upland, not in the Duwamish Valley lowland. Given the regional flow of groundwater toward the river from the highlands on both sides of the valley, these wells would not be impacted by constituents in DC groundwater.

- **It is unlikely that hazardous substances will be transported from the contaminated groundwater to groundwater that is a current or potential future source of drinking water (WAC 173-340-720[2][c]).** Shallow groundwater at the DC, which is impacted by contaminants, does not have the potential to contaminate other groundwater, because it flows west to discharge to the LDW. Furthermore, groundwater in the vicinity of the DC is not a current or potential future source of drinking water because of the proximity of the LDW (i.e., salt water intrusion) and because of an established municipal water supply in the Duwamish Valley (the City of Tukwila Public Works Department, Water Utility Division, supplies water provided by Seattle Public Utilities, which comes from the Cedar River Watershed).
- **There are known or projected points of entry of the groundwater into the surface water (WAC 173-340-720[2][d]).** The DC is a shoreline site along the LDW. Shallow groundwater at the site flows west to discharge to the waterway.
- **The surface water is not classified as a suitable domestic water supply source under chapter 173-201A WAC (WAC 173-340-720[2][d]).** The segment of the LDW adjacent to, and downstream of, the site consists of fresh water overlying salt water and is not considered a suitable domestic water supply source according to WAC 173-201A-602, Table 602: Water Resource Inventory Area 9.
- **The groundwater is sufficiently hydraulically connected to the surface water that the groundwater is not practicable to use as a drinking water source (WAC 173-340-720[d]).** The shallow unconfined aquifer at the site is hydraulically connected to the LDW, as evidenced by the tidal response observed in site monitoring wells (LAI 1987b, Tetra Tech 1996).

2.4 Site History

This section presents a brief history of the DC, including Boeing's past operations at the site.

2.4.1 Early Commercial Use

Before the US Army Corps of Engineers (USACE) channelized the LDW around 1918, the site was farmland. The earliest known commercial operations at the site began in 1927, when Pankratz Lumber Company (a sawmill), Washington Compressed Gas Company (a welding supply company), and Associated Packing Company (a stockyard and meat-packing plant) occupied the northeast corner of the site. In 1947, the location previously occupied by Washington Compressed Gas Company was occupied by an office building and a warehouse used to store modular home components. Associated Packing Company operated until 1956, and the Pankratz Lumber Company closed sometime between

[1] Water rights exist for domestic and/or irrigation wells in sections east and south of the site, but none of these is located within the two sections occupied by the DC (T23N, R4E, Section 4 and T24N, R4E, Section 33) and locations are upgradient or cross-gradient from the DC (LAI 2002b).

1958 and 1963. The only known waste associated with these businesses was a scrap wood pile on the Pankratz Lumber Company property (Science Applications International Corporation [SAIC] 1994).

By 1938, Monsanto Fund (now called the Bayer Fund) purchased the northern 38 acres of the site. Monsanto Fund leased the property to tenants of a warehouse and office buildings, American Winegrower's Association, Dallas-Mavis (a commercial trucking company), a granary, and Slip 6 (a boat slip). In 1938, a winery owned by the American Winegrower's Association occupied the property south of Washington Compressed Gas and adjacent to East Marginal Way South. The winery expanded in 1946 and again in 1968 until it occupied 60,000 square feet (ft^2) of the property. The winery closed in the mid-1970s. There were two 1,000-gallon underground concrete settling tanks associated with the winery that were removed from the site. Dallas-Mavis occupied the location of the Museum of Flight (former Building 9-04) and the adjacent parking lot areas until 1989. A 77,000-ft^2 granary was located to the north and to the west of the winery. Grain storage ended in 1973, after which it functioned as a warehouse until 1985 (SAIC 1994).

The Port of Seattle purchased the Monsanto Fund property and took over the leases in 1976. They leased the northeastern five acres of the site in two parcels to Transport International Pool (a truck trailer rental, leasing, and sales company) and Kenworth Truck Company (a commercial trucking company) for parking and storage. Isaacson Steel (a structural steel manufacturer) leased the former granary for storage. Terminal 128 Corporation leased Slip 6 and intended to develop it as a marina, but this never occurred. The only known waste associated with the businesses occupying the Monsanto Fund property post-1976 was from the Terminal 128 lease. In February 1984, the Port of Seattle notified Terminal 128 Corporation that three transformer vaults had illegal hook-ups and that the associated sumps contained debris that was making them inoperable. There were also oil and chemical leaks and spills. Terminal 128 Corporation hired a contractor to remediate the leased property to the Port of Seattle's satisfaction (SAIC 1994).

In the mid-1930s, the southeastern portion of the property was occupied by a grocery store and a gasoline station. The gas station only operated for a short time period. A portion of the grocery store building was leased and occupied by a tavern and a warehouse. The building was destroyed by a fire in the 1940s (SAIC 1994).

Pamco Construction Company owned and operated a construction yard and commercial parking lot in the area of the DC south parking lot until 1955. Between 1958 and 1963, Pro Gas (a propane distributor) was located adjacent to East Marginal Way South on the southern half of the site.

2.4.2 Boeing Operations and Waste Management Activities

Boeing has operated at the site since 1956. Prior to October 1980, the Military Airplane Company Division of Boeing operated the facility. After October 1980, the DC began operations, with management transferring to the Boeing Advanced Systems Company Division in November 1987. The

DC was separated from the Military Flight Center (now known as the Military Delivery Center) as part of a reorganization effort in 1990 (SAIC 1994).

Activities at the DC have changed over time in response to the needs of the aerospace industry. Activities that have occurred at the DC facility consist of research and development programs including the Bomarc missile, Minuteman Intercontinental Ballistic Missile, Supersonic Transport, YC-14 short takeoff/ landing transport, YF-22 fighter prototype, and the Boeing Joint Strike Fighter candidate. Manufacturing activities have included significant portions of the B-2 stealth bomber and military variants of Boeing commercial jets (Boeing 2009). Past manufacturing operations included machining of metal aircraft hardware, electroplating, chemical milling, conversion coating, painting, parts cleaning, and assembly. Experimental manufacturing shops and research laboratories were used to investigate production aspects of materials and processes for manufacturing. There were also laboratories to investigate metals technology and electronics sciences (SAIC 1994).

Boeing operated the DC as a Dangerous Waste Management Facility on or after November 19, 1980. Boeing first notified the EPA of dangerous waste management activities in August 1980, including a list of dangerous waste codes managed. Since the first notification, Boeing has revised its Dangerous Waste Activity Notification six times and added additional waste codes (Ecology 2019a). The following dangerous wastes have been managed by Boeing at the DC:

Waste Code(s)	Description
F001 and F002	Halogenated solvents
F003 and F005	Non-halogenated solvents
F007, F008, and F009	Cyanide from electroplating operations
F017	Paint residues
D000	Toxic chemicals listed in WAC 173-303-090(8)
D001	Ignitable
D002	Corrosive
D003	Reactive
D005	Barium
D006	Cadmium
D007	Chromium
D008	Lead
D009	Mercury
D010	Selenium
D011	Silver
D018	Benzene

Waste Code(s)	Description
D026	Cresol
D035	Methyl ethyl ketone
D039	Tetrachloroethene (PCE)
W001	Polychlorinated biphenyls (PCBs)
WL01 and WL02	Lab pack (i.e., assorted laboratory waste chemicals)
WT01 and WT02	State-only toxic wastes
WC01 and WC02	State-only carcinogenic wastes
WP01 and WP02	State-only halogenated organic wastes
U075	Dichlorodifluoromethane

Revisions of the dangerous waste notification also reported approximately 2.5 million pounds of dangerous wastes generated at the DC as of 1988 and approximately 30 million pounds of contaminated groundwater as of 1994 (Ecology 2019a).

In November 1980, Boeing submitted Part A of its Dangerous Waste Management Facility RCRA permit application to the EPA. Boeing originally identified itself as managing six wastes (F001, F002, F003, F005, F007, and F009) at the DC. It reported managing 660,000 pounds of hazardous waste per year and the capacity to store 27,000 gallons of waste in containers and tanks (Ecology 2019a). Boeing has amended Part A of the RCRA permit three times since 1980:

- **April 1985:** Increased the annual waste quantity generated at the DC to 1,017,000 pounds.
- **April 1988:** Decreased the annual waste quantity generated at the DC to 488,000 pounds and tank storage was removed from the facility storage capacity.
- **2002:** Updated the property boundary after the northeast corner parcel was transferred to the King County Museum of Flight.

Interim status storage container storage areas in Buildings 9-50, 9-60, and 9-69/70 and an aboveground storage tank (AST) near Building 9-101 were properly closed according to RCRA requirements; Ecology accepted the final closure certification in September 1997 (Ecology 1997).

The DC currently operates as a large quantity generator because all RCRA treatment, storage, and disposal units have been closed since 1997. However, the facility's interim status as a Dangerous Waste Management Facility will not be terminated until RCRA corrective action is completed, per the Agreed Order signed July 23, 2019 (Ecology 2019a).

3.0 PREVIOUS EVALUATIONS, INVESTIGATIONS, AND CLEANUPS

Various evaluations, environmental investigations, and remedial actions have been conducted at the site to characterize and evaluate the presence and extent of contamination in soil, groundwater, and air, as well as to address specific releases. The following sections briefly describe previous site evaluations, environmental investigations, and remedial actions; references within each section provide more detail. Historical analytical data are provided as tables in Appendices D through G. Historical groundwater elevations are provided as a table in Appendix H. A summary of construction details for site monitoring wells is provided as a table in Appendix I. Investigation and cleanup areas are presented on Figures 3 through 14, as referenced in the following sections.

Prior evaluations, investigations, and interim actions began as early as 1984 prior to the RCRA Facility Assessment (RFA) and will continue through approval of this work plan. Interim actions as described in the IAWP are ongoing in three areas. Additional investigation will be performed as described in Section 6.0.

3.1 RCRA Facility Assessment

An RFA was performed by SAIC in 1994 in order to identify releases, identify and evaluate SWMUs and AOCs, determine the need for further investigation or interim actions, and eliminate SWMUs and AOCs that do not pose a threat to human health or the environment from further investigation. The three steps of the RFA included preliminary review of existing files and information, a visual site inspection to confirm existing information and/or gain new information about past or present releases, and a data gaps investigation, if necessary, to obtain additional field and analytical data (SAIC 1994).

The RFA identified 157 SWMUs and five AOCs at the DC, which are described in detail in the RFA report (SAIC 1994).

3.2 Evaluation of RFA Findings

In 2002, LAI prepared a summary report on the historical corrective actions performed at the DC and evaluated the need for further action at SWMUs and AOCs identified in the RFA (Summary Report; LAI 2002b). The Summary Report evaluated each SWMU and AOC and determined that the majority of the SWMUs could be excluded from further investigation based on a determination that they do not pose a threat to human health or the environment (LAI 2002b). It was demonstrated that all of the original SWMUs and AOCs required no further action, with the exception of five AOCs and eight SWMUs.

Based on the findings of the RFA, the evaluation performed by LAI, and other available information, Ecology identified four SWMUs and five AOCs for further action. Per the Agreed Order (No. DE 16275) and as agreed to during the RI Planning Meeting on August 6, 2019, the following areas will be the focus of the RI:

- AOC-01/02, former fuel underground storage tanks (USTs)
- AOC-03/04, former No. 5 fuel oil USTs
- AOC-05, former unleaded gasoline UST
- SWMU-16, former regulated materials storage area
- SWMU-17, former sump and USTs
- SWMU-20, former degreaser pit
- SWMU-43, stormwater sewer system
- Gate J-28/Museum of Flight.

In addition to the areas listed above, the potential to contaminate or re-contaminate LDW sediments must be evaluated by analyzing the pathways of groundwater discharges/seeps and soil erosion (Ecology 2019a).

The locations of these investigation areas are presented on Figure 3. Site features and activities at the SWMUs and AOCs are described in detail in the Summary Report (LAI 2002b) and described briefly in the following sections. Pertinent activities related to the other areas or media of investigation is also described in the following sections.

3.3 Previous Investigations and Cleanups by Area

This section describes investigations and interim action cleanups that have been performed at the four SWMUs and five AOCs identified in the Agreed Order (No. DE 16275). Three other investigation areas not directly related to an AOC or SWMU are also discussed. Interim action cleanup and monitoring is ongoing at three areas at the DC facility, as summarized below. Data gaps are noted in the following sections, with the details of proposed additional investigation presented in Section 6.0. All investigations and cleanups performed prior to this work plan are summarized in Table 1, and each area's location within the DC facility is presented on Figure 3.

3.3.1 AOC-01/02: Former Fuel USTs

AOC-01/02 consists of two steel USTs (DC-18 and DC-19) located near Building 9-52 and are part of a fueling station that services Boeing vehicles and other equipment (Figure 4). The current tanks were installed in June 1990 to replace the original tanks after a leak was discovered. The original USTs were installed in 1985 and used to store unleaded gasoline (DC-14) and diesel fuel (DC-13). During a tank tightness test in April 1990, it was discovered that DC-14 was leaking, possibly as a result of an improperly-attached fill pipe. Both of the original USTs were decommissioned and removed, and the surrounding soil was excavated until soil at the base of the excavation met MTCA Method A cleanup criteria. The original USTs were subsequently replaced (LAI 2002b).

During and after excavation, 31 soil samples and one groundwater sample were collected and analyzed for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, xylenes (BTEX;

LAI 1990b). TPH was not detected in the soil samples; BTEX was detected but concentrations were below preliminary screening levels used in the Summary Report. TPH and BTEX were both detected in the groundwater sample, but concentrations were below preliminary screening levels (LAI 2002b). Analytical results from excavation perimeter sidewalls that represent soil quality of the maximum extent of excavation are presented in Appendix F. The one groundwater grab sample (DC952W2) collected from the bottom of the excavation is presented in Appendix D.

Floating product was not observed during excavation, but foam was present. To evaluate the potential presence of floating product and impacts to groundwater in the vicinity of USTs DC-13 and DC-14, three shallow monitoring wells were installed upgradient (DC-9-52-1) and downgradient (DC-9-52-2 and DC-9-52-3) of the suspected source in 1991 (Figure 4; LAI 2002b). The three monitoring wells were sampled periodically from 1991 to 1995, approximately annually from 1997 to 2000, and semiannually from 2001 to 2002 (Appendix D). Samples were analyzed for BTEX, diesel-range total petroleum hydrocarbons (TPH-D), gasoline-range total petroleum hydrocarbons (TPH-G), PCBs, and metals. Only TPH-D, cadmium, and copper were ever detected above preliminary screening levels in groundwater. In December 2000, TPH-D was detected above the preliminary screening level in two wells (DC-9-52-1 and DC-9-52-3), but concentrations decreased to below the screening level by December 2001. The Summary Report (LAI 2002b) indicated that semiannual sampling in AOC-01/02 would continue until TPH-D, TPH-G, and BTEX concentrations at all three wells remained below the detection limit for two consecutive monitoring events. Sampling in AOC-01/02 was discontinued in 2002 after achieving the required results. Ecology concurred that the monitoring requirements had been met and no further groundwater monitoring or other action was required in this area (Ecology 2002).

Additional investigation of soil and groundwater at AOC-01/02 will be performed to confirm that no further action is necessary. New data collected will determine if contaminants related to the leaking USTs remain below screening levels and/or detection limits in both media. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.2 AOC-03/04: Former No. 5 Oil USTs

AOC-03/04 consists of two 20,000-gallon double-wall composite USTs (DC-20 and DC-21) located near Buildings 9-90 and 9-94 (Figure 3). Current USTs replaced the original 20,000-gallon USTs (DC-03 and DC-04), which were installed in 1957. USTs store No. 5 fuel oil used by a steam plant in Building 9-50. Soil conditions outside of the two original USTs were evaluated in 1985; there was no evidence of a release of petroleum hydrocarbons. However, during a tank tightness test in 1991, it was discovered that the westernmost of the original tanks was leaking. Both original USTs were removed and replaced in 1992 (Figure 5; LAI 2002b).

Upon removal of the original USTs, several holes were noted near the bottom of both tanks. Approximately 250 cubic yards of petroleum hydrocarbon-contaminated soil and 200–500 gallons of

free product were removed from the excavation during tank removal. A small area of soil remained at the base of the excavation with concentrations of petroleum hydrocarbons above the preliminary soil screening level; soil contamination at the bottom of the excavation was not removed because it was beyond the reach of the excavating equipment, was below the water table, and the affected area was relatively small. Further soil removal was deemed unnecessary because of the relative immobility of the fuel oil (LAI 2002b).

One monitoring well (MW-21A) was installed in 1992 in the vicinity of the two USTs (Figure 5). TPH was not detected in soil and groundwater samples collected during installation (Appendix D and Appendix F). A second monitoring well (MW-21C) was installed in 2001 (Figure 5). Periodic sampling at MW-21A began in 1992 and semiannual sampling at both wells began in 2001; samples were analyzed for volatile organic compounds (VOCs) and TPH-D (Appendix D). In 2002, following four semiannual events in 2001 and 2002 in which TPH-D and oil-range total petroleum hydrocarbons (TPH-O) were not detected at these wells, sampling was discontinued in AOC-03/04 with a document of notification provided to Ecology (Boeing 2003).

Additional investigation of soil and groundwater will be performed in AOC-03/04 to confirm that further action is not necessary. Results of the investigation will determine if contaminants related to the leaking USTs remain below screening levels and/or detection limits in both media. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.3 AOC-05: Former Unleaded Gasoline UST

AOC-05 was a 1,000-gallon unleaded gasoline UST (DC-01) located south of Buildings 9-60 and 9-61 (Figure 3). The UST was removed in 1985 after a measuring rod punctured the bottom of the tank and released approximately 830 gallons of gasoline to the surrounding soil and groundwater (LAI 2002b). When the UST was removed, approximately 500–600 gallons of floating product were removed from the excavation. Additional contamination was removed in excavated soil.

Groundwater sampling from direct push borings (SB-7 through SB-12) in 2001 indicated TPH-G and BTEX contamination in the vicinity of the former UST (Figure 6; Appendix D). Four monitoring wells (BDC-101 through BDC-104) were installed in 2001 (Figure 6; Appendix D). An initial attempt to stimulate aerobic biotreatment of residual contamination was unsuccessful; an evaluation of aquifer reduction-oxidation (redox) conditions suggested that an anaerobic approach would be more effective (LAI 2006a). Pilot testing and full-scale anaerobic bioremediation efforts since 2007 have been more successful at treating remaining contamination in the vicinity of the former AOC-05 UST (LAI 2019a).

Investigation and interim action cleanup and groundwater monitoring activities continue to be performed in AOC-05 and are reported semiannually. These activities are described in detail in the IAWP (LAI 2019a). Historical soil data is not available; further investigation of soil at AOC-05 will be performed to determine if soil is a media of concern and requires action. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.4 SWMU-16: Former Regulated Materials Storage Area

SWMU-16 is a former regulated materials storage area located in and near former Building 9-69/70 (Figure 3). This waste management unit handled regulated waste that was generated throughout the DC facility from 1979 to 1992. Building 9-69/70 consisted of six container storage bays that were used to segregate flammables, corrosives, and other materials. This area was also used to store lead acid batteries. The container storage bays were enclosed by curbs, metal walls, and a post-supported canopy roof. A strip drain ran across the front of each bay, which emptied into an oil/water separator (SWMU-35; LAI 2002b).

Ecology approved a RCRA Closure Plan for Building 9-69/70 in 1993, and the building structures were removed in 1996. Samples of the concrete slab, surface soil, and subsurface soil were collected and analyzed for VOCs, semi-volatile organic compounds (SVOCs), total PCBs, and priority pollutant metals; this data is not available. All four categories of compounds were detected in soil samples. Total PCBs in soil beneath the concrete slab exceeded MTCA Method A CULs and lead was elevated in soil beneath the asphalt. Approximately 800 cubic yards of contaminated soil were excavated from SWMU-16 and disposed of at an approved facility (Figure 7). All concrete underlying the facility was also removed and disposed. Ecology approved the closure of Building 9-69/70 in 1997 (Ecology 1997).

During the closure of Building 9-69/70, soil was excavated beyond the boundary of the waste management unit. PCBs were detected in a sample collected in the area beyond that boundary. Concentrations were below MTCA Method A CULs, but the detection prompted Ecology to request additional investigation in this area. The additional investigation, approved and performed in 2001, included sampling groundwater from six direct-push borings (SB-1 through SB-6) to evaluate whether PCBs detected in soil were impacting groundwater (Figure 7; Appendix D). All groundwater samples collected were non-detect for PCBs (LAI 2002b).

Additional investigation of VOCs, PAHs, PCBs, and metals in soil and groundwater will be performed in SWMU-16 to determine if further action is necessary. Although prior investigations indicated these contaminants were not affecting groundwater, Ecology is requesting additional groundwater data at lower reporting limits and additional soil sampling because of historical soil samples. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.5 SWMU-17: Former Sump and UST

SWMU-17 is a former sump and associated 4,000-gallon steel UST used to store waste hydraulic oil and engine oil (Figure 3). The sump/UST system, designated DC-05, was installed to the west of Building 9-64 (Figure 8). Waste oil generated by hydraulic testing shops, automotive maintenance shops, and various other activities at the DC was poured into the sump, which drained to the UST. The waste oil was periodically pumped from the UST and shipped offsite for treatment and disposal (SAIC 1994). The sump and UST were closed and removed in 1986 (LAI 2002b).

Soil samples collected in 1985 in the vicinity of the UST indicated that soil was impacted by hydrocarbons. The impacted soil prompted the installation of three monitoring wells (BDC-05-01, BDC-05-02, and BDC-05-03) in 1986 (Figure 8). During installation, a soil sample from the boring for BDC-05-02 was analyzed for VOCs and priority pollutant metals (Appendix F). The sample contained several VOCs and metals, but the only constituent that exceeded preliminary screening levels was copper. The presence of acetone, toluene, and total xylenes combined with the absence of benzene suggested that the observed contamination was related to non-chlorinated solvents and not hydrocarbons, as previously expected. A total of four additional wells (BDC-05-04 through BDC-05-07) were installed to further define the extent of contamination associated with the former UST. Wells BDC-05-01 and BDC-05-06 were later abandoned (LAI 2002b).

Soil and groundwater sampling (Appendices D and F) through 2011 characterized the extent of tetrachloroethene (PCE) and trichloroethene (TCE) contamination in the vicinity and downgradient of the former sump and UST (Figure 9; LAI 2011). Pilot testing and full-scale bioremediation efforts since 2008 have provided treatment of residual contamination (LAI 2019a). A total of 17 additional monitoring wells (BDC-05-08 through BDC-05-24) were installed during bioremediation implementation.

Direct-push borings sampled in 2011 were located near Building 9-53. Data collected at direct-push borings located between SWMU-17 and Building 9-53 demonstrate that groundwater contamination does not migrate toward the building. Specifically, borings DPS17-16, DPS17-17, and DPS17-28 (Figure 9), located along the road that separates the SWMU and the building, were non-detect for PCE and TCE, as well as bioremediation breakdown products cis-1,2-dichloroethene (cDCE) and vinyl chloride (VC; Appendix D).

Building 9-98 is also located west-northwest of SWMU-17 and is located downgradient of the known contamination. However, data at wells in the immediate vicinity of the building indicate that groundwater VOC concentrations are all below Method C Groundwater Screening Levels for vapor intrusion (Ecology 2020). The maximum VC concentration in November 2019 was 2.56 micrograms per liter (µg/L) at well BDC-05-03 (Appendix D), which is located approximately 185 ft upgradient of Building 9-98. This value is well below the Method C concentration of 3.5 µg/L. Additionally, all VOC concentrations at the four wells immediately adjacent to Building 9-98 (BDC-05-20, BDC-05-21, BDC-05-22, and BDC-05-23; Figure 9) were below Method C values in November 2019 (Appendix D). All detected groundwater VOC concentrations within SWMU-17 are also orders of magnitude lower than the worst case groundwater concentrations evaluated by previous indoor and ambient air sampling performed at the DC (Section 3.3.6.4).

Investigation and interim action cleanup and monitoring activities continue to be performed in SWMU-17 and are reported semiannually. These activities are described in detail in the IAWP (LAI 2019a). Further investigation of soil at SWMU-17 will be performed because of limited historical soil data and to evaluate the potential for vapor intrusion at nearby buildings. Additional data will

determine if soil is a media of concern and requires additional action. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.6 SWMU-20: Former Degreaser Pit

SWMU-20 is a former degreaser pit that was located in the northwest corner of Building 9-101 (Figure 10). The concrete-lined degreaser pit and associated sumps were used from around 1956 until 1984. The pit contained the vapor degreaser and provided containment/collection of the solvents (reportedly PCE and TCE) used in the degreaser. All tanks, piping, and equipment were removed when the degreaser pit and sumps were closed in 1984. The pit and sumps were backfilled with compacted sand and gravel and capped with a 10-inch-thick concrete slab. All openings through the walls and floors were plugged (LAI 2002b).

Soil and groundwater sampling during three initial phases of investigation and subsequent groundwater monitoring confirmed chlorinated VOC contamination in the vicinity of the former degreaser pit. Interim action cleanup, including operation of a groundwater pump-and-treat system and *in situ* bioremediation efforts, have been effective at treating contamination.

Investigation and interim action cleanup and groundwater monitoring activities continue to be performed in SWMU-20 and are reported semiannually. These activities are described in detail in the IAWP (LAI 2019a). Further investigation of soil will be performed at SWMU-20 and samples will be analyzed for VOCs for comparison to prior data and to further evaluate the potential for vapor intrusion. Groundwater samples will also be analyzed for naphthalene to further evaluate the source of naphthalene in groundwater. Additional data will determine if soil is a media of concern and requires further action. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.6.1 Investigations, Excavation, and Monitoring

In March 1989, Boeing began a structural improvement construction project at Building 9-101 (Figure 10). The primary purpose of the structural improvements was to strengthen and protect the building against seismic disturbances. A major feature of the construction project was to install clusters of auger cast piles with reinforced concrete pile caps. One of the pile caps (Area 6.1 Pile Cap) overlapped with the location of the former degreaser pit in SWMU-20. Two subsurface environmental investigations were performed prior to construction (LAI 1990a). The following presents a timeline of construction and investigation activities:

- **June 1989:** Phase I environmental site assessment (ESA) work plan was finalized. Phase I ESA soil quality investigation was completed.
- **August and September 1989:** Phase II ESA work plan finalized and Phase II ESA field investigations were performed.
- **November 1989:** Area 6.1 Pile Cap construction began with removal of preexisting sand backfill from the western portion of the former degreaser pit.

- **November and December 1989:** Concrete floor and west wall of the former pit were cored and sawed.
- **December 1989:** Twenty auger cast piles were installed through the holes cored in the floor of the former degreaser pit. Exterior pavement from the construction area adjacent to the west wall of Building 9-101 was removed. Monitoring well MW-8A, installed during the Phase II ESA, was abandoned during construction because it was located within the planned extent of the pile cap excavation (Figure 10).
- **January 1990:** Western wall of the former degreaser pit was demolished. Soil in the western half of the planned pile cap was excavated to a depth of approximately 10–11 ft below grade. A lean concrete slab with openings for auger cast piles was poured in the bottom of the excavation outside of the building to provide a clean working surface below grade.
- **January to February 1990:** Remaining auger cast piles were installed through the openings in the lean concrete slab.
- **February 1990:** Reinforced concrete pile cap was poured.

During the Phase I ESA in June 1989, sampling was performed at four test pits excavated within the former degreaser pit and at soil borings drilled outside of Building 9-101 along the western margin of the pit. Six soil samples (Test Pit 1, 2, 4 Comp and Test Pit 1; Appendix F) and one water sample (Sump Water; Appendix D) were collected from the test pits and analyzed for VOCs, SVOCs, select metals, and cyanide. Low levels of PCE, TCE, cDCE, VOCs, and metals were detected in the degreaser pit backfill. PCE, TCE, and cDCE concentrations in the water sample within the former pit were elevated. Soil samples (Bldg 9-101-1 through Bldg 9-101-5; Appendix F) were also collected from the five borings outside of Building 9-101. Three of the borings were drilled at an angle such that the soil samples were collected beneath the floor of the pit. PCE, TCE, VC, and total PAHs were elevated in the samples. Other VOCs and SVOCs were detected, but at low concentrations (LAI 1990a). The five Phase I soil borings are within the extent of the excavation for pile cap construction, as shown on Figure 10.

The findings of the Phase I ESA prompted the Phase II ESA in August 1989, which consisted of installing and sampling 24 groundwater monitoring wells, sampling soil at 11 of the new monitoring well boreholes, and measuring groundwater elevations. The 65 soil samples collected during the Phase II ESA (Appendix F) and groundwater samples from the new wells (Appendix D) confirmed the presence of chlorinated VOCs in soil and groundwater beneath, and adjacent to, the former degreaser pit (LAI 1990a).

Approximately 1,448 tons of potentially contaminated soil and concrete rubble were generated during pile cap excavation and construction in 1989 and 1990 (LAI 1990a). The extent of excavation for construction is presented on Figure 10. Waste soil and rubble included fill removed from inside of the western portion of the former degreaser pit, soil and concrete grout generated from pile installation, concrete rubble from demolishing the west wall of the former pit and from coring holes, and soil

removed from outside the west wall of Building 9-101. Soil was segregated and sampled before disposal at appropriate waste facilities (LAI 1990a).

A Phase III ESA was performed in February 1991 in order to define the downgradient limits of various VOCs in SWMU-20 soil and groundwater. Additional soil sampling for VOCs was performed at borings for 13 new monitoring wells installed during the Phase III ESA (Appendix F). Groundwater samples were collected from the 24 existing monitoring wells and the 13 new monitoring wells and analyzed for VOCs (Figure 10; Appendix D). Sampling established the approximate downgradient extent and vertical distribution of VOC contamination in SWMU-20 groundwater (LAI 1992).

ESAs and subsequent investigations confirmed the presence of chlorinated VOCs in soil and groundwater. The former degreaser pit was the suspected source of the solvent release. The most frequently detected compounds in soil were PCE, TCE, cDCE, and VC. Frequently detected compounds in groundwater included benzene, PCE, TCE, cDCE, VC, and naphthalene. Concentrations of PCE, TCE, and cDCE in groundwater were greatest in the shallow groundwater (6.5–21.5 ft below ground surface [bgs]) and near the former degreaser pit. Concentrations generally decreased in the direction of groundwater flow (west) away from the former degreaser pit and generally decreased with depth (LAI 2002b). Monitoring well MW-8A was decommissioned in December 1989; wells MW-18A, MW-18C, and MW 18D were decommissioned in July 1992 and reinstalled in October 1992 (LAI 1992). Two additional wells (MW-22A and MW-23A) were added in 2005 to confirm the downgradient extent of the groundwater plume (Figure 10; Appendix D).

Quarterly to semiannual monitoring began in January 1994. Sampling reductions were approved by Ecology in 2010 and 2015. Originally, 29 of the existing monitoring wells in SWMU-20 were regularly sampled. The 2010 sampling reduction discontinued semiannual monitoring at 11 of the 29 wells where VOCs of concern (PCE, TCE, cDCE, and VC) had been below reporting limits for 2 years or more (LAI 2010). Monitoring continued at 18 wells in SWMU-20 until 2015, when a second sampling reduction discontinued semiannual monitoring at four of the 18 remaining wells. The 14 wells retained for ongoing sampling were all wells where PCE, TCE, or VC was detected at a concentration of more than half of the previously proposed CULs in May 2014 or were of continued interest for Ecology. Semiannual monitoring at these 14 wells is ongoing to evaluate continued monitored natural attenuation (MNA) in SWMU-20 (LAI 2015a, b). Wells not included in the current monitoring program have not been decommissioned.

3.3.6.2 Interim Actions for Groundwater Contamination

Interim action groundwater treatment in SWMU-20 has consisted of groundwater pump-and-treat followed by *in situ* bioremediation. These interim actions are described below.

After completion of the previously described ESA soil and groundwater investigations, a groundwater pump-and-treat system was installed. The system was designed to prevent further contaminant migration and for VOC mass removal. The treatment system, consisting of two extraction wells (E-1

and E-2; Figure 10) and a sieve tray aerating treatment system, operated from fall 1993 to December 2001 (approximately 8 years). The system was shut down in December 2001 to allow the groundwater to equilibrate for evaluation of potential rebound and for evaluation of natural attenuation as a remedial alternative to achieve the previously proposed CULs (LAI 2004b).

Substantial contaminant concentration rebound was observed within 2 years following the shutdown of the groundwater treatment system. Enhanced reductive dechlorination through electron donor amendment (i.e., bioremediation) was recommended to address the rebound in VOC concentrations observed following groundwater treatment system shutdown (LAI 2002b).

The groundwater treatment system was not restarted and was decommissioned in June 2014. Ecology agreed that the treatment system was not likely to be needed in the future because of effective treatment via bioremediation. The air stripper was relocated to another Boeing site for reuse. Submersible pumps were removed from extraction wells and system piping was disconnected and capped. The treatment building remained at the site for future use or later removal (LAI 2014).

In situ bioremediation has been stimulated through a series of five electron donor injection events. Bioremediation has targeted contaminant concentrations near the former degreaser, downgradient, and at peripheral wells not affected by earlier injections. Iterative full-scale bioremediation was implemented without pilot testing. These injections are described in detail in the IAWP (LAI 2019a).

It is anticipated that the 12-year period of bioremediation injections followed by a period of MNA will result in VOC concentrations that meet interim action cleanup objectives at all SWMU-20 monitoring wells.

3.3.6.3 Continued Naphthalene Detections

Naphthalene was detected in groundwater during ESAs in SWMU-20 and has been detected in samples collected during regular groundwater monitoring since 1996. Recent naphthalene detections are comparable to historical data, but one regularly sampled monitoring well (MW-22A) continues to exceed the previously proposed CUL. Ecology has requested additional investigation into the source of this naphthalene in SWMU-20 groundwater.

The most prominent historical increases in naphthalene concentrations occurred at two monitoring wells near the former degreaser (MW-8C and MW-15A) in the northwest corner of Building 9-101 between 1998 and 2009 (Figure 10). A plot of naphthalene concentrations over time is presented on Figure 11. The maximum naphthalene concentration was 1,721 µg/L at monitoring well MW 15A. Naphthalene concentrations have exceeded the previously proposed CUL (26 µg/L) in every sample collected at both MW-8C and MW-15A since 1996 (Table 2).

As part of two Ecology-approved sampling reductions in SWMU-20, monitoring at MW-8C ceased in November 2009 and monitoring at MW-15A ceased in November 2014 (LAI 2010, 2015a). At the

monitoring wells still sampled in this area, naphthalene continues to be detected at two wells near the former degreaser (MW-9A and MW-13C) and one well slightly downgradient of the former degreaser (MW-22A; Figure 11, Table 2).

Naphthalene concentrations at downgradient well MW-22A have exceeded the previously proposed CUL and have generally been increasing since November 2016 (Table 2). It is the only well sampled during regular groundwater monitoring in SWMU-20 that still exceeds the previously proposed CUL at a concentration of 783 µg/L. Regular groundwater monitoring for naphthalene continues at 14 wells in and near SWMU-20.

The source of the naphthalene has not been confirmed. Additional investigation will include soil sampling for naphthalene and other VOCs to determine if an unknown soil source has also affected soil in SWMU-20, or if there is another possible source present. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.6.4 Indoor Air Evaluation and Sampling

Indoor air evaluations were performed in the vicinity of SWMU-20 using the Johnson-Ettinger model to estimate potential human health risks associated with exposure to indoor air because of VOCs in the underlying shallow groundwater. These evaluations were performed for Building 9-101, which overlies the source, and Building 9-90, located hydraulically downgradient of the source (Figure 10). The initial model run concluded that the associated risk levels for occupational inhalation of potentially impacted indoor air were at, or below, the regulatory criteria (LAI 2005a). Further evaluation of indoor air followed increased VC concentrations in groundwater at MW-14A in October 2004 (650 µg/L) resulting from initial source bioremediation (LAI 2005a). Well MW-14A is located immediately upgradient of Building 9-90 (Figure 10). Recognizing that ongoing SMWU-20 source zone treatment (i.e., bioremediation injections) could result in higher VC concentrations at downgradient well MW-14A, the model was run to identify the threshold average groundwater VC concentration beneath Building 9-90. Above this threshold, a potential would exist for unacceptable risks to human health from inhalation of indoor air. The model output estimated that the threshold VC groundwater concentration protective of human health was 43 µg/L. Ecology comments to this additional evaluation and a VC detection as high as 1,000 µg/L at MW-14A resulted in indoor air sampling in Building 9-90, located downgradient of the Building 9-101 source (LAI 2005b).

Three indoor air samples were collected in January 2006 in the north portion of Building 9-90 and along the estimated centerline of the VOC groundwater plume in order to characterize potential vapor intrusion (Appendix G). A concurrent ambient air sample was collected outdoors near ground level to assess possible background contributions to any indoor air detections. Low levels of PCE and TCE were detected in all three indoor air samples and in the outdoor ambient air sample. cDCE and VC were not detected in any sample. The detected concentrations of corrected indoor air results for PCE and TCE were below the MTCA Method B CULs (LAI 2006b). Additionally, indoor and ambient air samples were approximately equivalent, suggesting that indoor air concentrations were the result of

the ambient air concentrations. These indoor air samples are representative of worst-case groundwater conditions for VC, as the all-time maximum VC concentration of 1,000 µg/L was detected at MW-14A in February 2005. Since the February 2005 bioremediation injection at MW-14A (third injection), VC concentrations in groundwater at MW-14A have been low to non-detect. Any subsequent detections of VC have been well below both the 43-µg/L estimated threshold value and the 650–1,000 µg/L range of detections that occurred just before and after collection of the indoor samples (LAI 2019b). All groundwater results for SWMU-20 wells were below the worst-case condition evaluated in 2006 and below the Method C Groundwater Screening Level for vapor intrusion for VC (3.5 µg/L; Ecology 2020) as of November 2019 (Appendix D). This includes wells inside, and in the immediate vicinity of, Building 9-101.

3.3.7 SWMU-43: Stormwater Sewer System

The stormwater sewer system at the DC was designated as SWMU-43. The stormwater system currently consists of storm drain lines, 12 oil/water separators, and 18 active stormwater outfalls (DC1, DC2, and DC4 through DC19) that drain to the LDW (Boeing 2020). The outfall pipe DC3 was plugged in 2018 as part of facility stormwater management and treatment improvements. The DC stormwater sewer system has been in operation since 1956 and has undergone many modifications (SAIC 1994). A stormwater system map of current conditions is presented on Figure 12. Seventeen of the 18 outfalls are exclusively private Boeing outfalls that convey stormwater runoff from roof drains and from catch basins in paved and landscaped areas of the DC (Boeing 2020, Ecology 2019a). Outfall DC1 discharges water from the parking lot at the south end of the DC, but also receives offsite runoff from the Norfolk storm drain system, overflows from the King County combined sewer system, and emergency overflows from a Seattle Public Utilities pump station. The offsite flow to DC1 is identified as Norfolk combined sewer overflow storm drain (CSO/SD).

Several investigations related to the stormwater sewer system have been performed since 2000. Stormwater solids, LDW sediment, and whole water sampling indicated that PCBs originating at the DC had the potential to enter the stormwater system and reach the LDW. In past years, Boeing has installed stormwater treatment improvements to remove stormwater potential contaminants of concern (PCOCs), including suspended solids and associated PCBs.

Reported investigations and studies, as well as storm drain cleaning and treatment activities, are summarized in following sections. Per Ecology's request, previous sediment investigation data for DC outfalls are included in Appendix K. Further investigation of soil and groundwater near stormwater features will be performed during the RI to determine if potentially contaminated stormwater is impacting other site media or if potentially contaminated groundwater is impacting stormwater. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.7.1 Solids Investigation and System Cleanout

Sampling of solids from the stormwater sewer system and of building materials suspected of being sources of contaminants have been performed at the DC. In 2000, storm drain solids from the south storm drain (i.e., DC2) and building materials used within the drainage area (i.e., Area 2) were sampled (Figure 3). PCBs, and more specifically Aroclor 1254, were detected at concentrations up to 1,100 milligrams per kilogram (mg/kg) in solid samples from manholes and catch basins located upstream of the DC2 outfall. Building materials sampled included caulk, roofing, tar sealant, asphalt sealant, and felt in sidewalk joints. PCBs were detected in several materials: Aroclor 1254 was detected in "newer joint sealant caulk," Aroclor 1260 was detected in "older black tar like material," and Aroclor 1248 was detected in roofing materials at Building 9-101 (Project Performance Corporation [PPC] 2001; Appendix J). Sampling for PCBs was also performed in 2002 at oil/water separators throughout the DC. Total PCBs were detected in both solids samples and water samples (Appendix J).

After PCBs were detected in sediment near the southern storm drain outfall (DC2), stormwater lines were cleaned in August 2002 as part of comprehensive source control program conducted by Boeing at the DC. Sampling showed that significant concentrations of PCBs were only present in residual scum and solids present in the stormwater lines. Approximately 500 ft of 24-inch concrete storm drain line were cleaned using a high-pressure jet rodding technique. Some areas of the south storm drain line beneath Building 9-101 were inaccessible for cleaning (LAI 2004a). Wastewater generated during cleaning was stored in a poly tank, and three samples of solids were collected from the bottom of the tank. Aroclor 1248 was detected in the tank bottom samples at a maximum concentration of 2,800 mg/kg (PPC 2002).

Because sections of stormwater line under Building 9-101 connected to outfall DC2 were inaccessible during the 2002 cleaning work, actions were taken to trap PCB-contaminated residual solids from those sections before it could migrate to the storm drain outfall. As a part of those efforts, options for stormwater treatment were evaluated. An underground stormwater sedimentation basin that also acts as an oil/water separator was selected as the preferred treatment method. A Vortechs® 9000 unit (stormwater treatment vault) was installed in the southern storm drain line upstream of Outfall DC2 in 2003 (the oil/water separator symbol shown upstream of 2.18M on Figure 12). Sections of the stormwater line around the vault were cleaned before and after installation of the Vortechs® unit using the same pressure jetting techniques used during the August 2002 cleaning work. Wastewater and solids generated during the 2003 cleanout were collected and removed by vacuum truck (LAI 2004a).

Stormwater solids samples have been collected upstream and downstream of the Vortechs unit in the south storm drain system. Samples were analyzed for PCBs to monitor concentrations in this area. Vortechs unit solids samples from 2016 and 2017 contained PCBs, metals, polycyclic aromatic hydrocarbons (PAHs), and petroleum hydrocarbons (Appendix J). Additional samples have been

collected near Building 9-101 to determine the source of elevated PCB concentrations in the sediment trap samples. A wipe sample and several solids samples from the Building 9-101 roof drains contained PCBs. Samples from passive filter bags installed upstream and downstream of the sediment trap also contained PCBs (Appendix J).

3.3.7.2 Lateral Loading Study

A lateral loading study was performed for the LDW during the 2010 and 2011 wet seasons to measure contaminant concentrations associated with stormwater discharges and to estimate lateral contaminant loadings from four significant stormwater outfalls that drain to the LDW. The study also identified PCOCs with the potential to contaminate LDW sediments (SAIC and NewFields 2011).

Two outfalls that were part of the lateral loading study are associated with stormwater and surface runoff from the DC facility: DC12 (King County outfall #2088), which exclusively drains Boeing property, and DC1 (King County outfall #2095), which includes the offsite Norfolk CSO/SD. Both outfalls are shown on Figures 3 and 12. Study results are as follows:

- The DC12 outfall receives runoff from a central portion of the DC, with a 13-acre drainage basin that includes buildings, parking lots, and a small green belt. Whole water (storm flow) samples collected upstream of the outfall contained PCBs, metals, PAHs, and polybrominated diphenyl ethers (PBDEs). Filtered solids samples contained PCBs, metals, PAHs, and dioxins/furans. Sediment trap solids samples contained only PAHs at this sampling location (Appendix J).
- Outfall DC1 discharges stormwater from the parking lot at the south end of the DC and offsite flow from the Norfolk CSO/SD. The Norfolk CSO receives runoff from the Norfolk storm drain system and overflows from the King County combined sewer system, as well as emergency overflows from a Seattle Public Utilities pump station. The 770-acre drainage basin for the CSO/SD includes residential and industrial properties in the Beacon Hill neighborhood and industrial properties adjacent to the DC. The capacity of the combined sewer system may be exceeded during periods of heavy rainfall, which can result in the discharge of untreated human and industrial waste from the CSO/SD into the LDW. Whole water samples (storm flow and base flow) collected upstream of the CSO/SD, and not associated with Boeing activities, contained PCBs, metals, PAHs, and PBDEs. Sediment trap samples contained dioxins/furans, PAHs, and PBDEs (Appendix J).

3.3.7.3 PCB Source-Tracing Study

In 2014 and 2015, Ecology conducted a National Pollutant Discharge Elimination System (NPDES) Inspection Sampling Support study in the LDW. The DC was included in the study and Ecology collected six water samples and four solids samples from the stormwater system (Appendix J). To further evaluate the results of the Ecology study and to collect and analyze stormwater solids in accordance with the requirements of the Industrial Stormwater General Permit (ISGP), a PCB source-tracing study was performed for the DC by CALIBRE Systems, Inc. (CALIBRE) in 2016. The results of the study confirmed that two manholes (MH-10.9 and MH-9.66) and two oil/water separators (OWS2 and OWS5) had detectible concentrations of PCBs (Appendix J).

3.3.7.4 Industrial Stormwater General Permit

Ecology issued an Administrative Order No. 14012 for the ISGP (No. WAR-000146) at the DC in February 2017. Administrative Order No. 14012 required Boeing to revise and resubmit the stormwater pollution prevention plan (SWPPP), submit an Engineering Report, and implement the revised SWPPP (including approved best management practices [BMPs] for treatment). Boeing submitted the revised SWPPP and the Engineering Report (LAI 2017) in June 2017. The SWPPP was further revised in October 2017, December 2017, April 2018, and January 2020 (Boeing 2020). Treatment BMPs specified in the Engineering Report were installed by December 2017. Selected treatment technologies included installation of CleanWay Storm Clean® catch basin filters with MetalZorb™ metal removal media (CleanWay filters), installation of MetalZorb media in mesh bags as filters in select site drainage structures, bulk installation of MetalZorb media in an oil/water separator, and installation of a mixed-media roof drain filtration unit (Figure 12; LAI 2017).

Agreed Order No. 15600 for the ISGP (No. WAR-000146) was issued by Ecology for the DC in December 2017. Agreed Order No. 15600 required Boeing to increase the frequency of stormwater monitoring, sample at eight additional outfalls, analyze samples for TPH and PCBs, and implement advanced treatment (Ecology 2019a). Available stormwater and stormwater solids sampling data is presented in Appendix J.

The SWPPP for the DC is a living document; it has been updated several times since the revision and resubmittal was mandated by Administrative Order No. 14012 in February 2017. Additional revisions have been made over the years in response to Agreed Order No. 15600 requirements, to document changes in sampling, or to document other site changes. The most recent SWPPP revision was made in January 2020 (Boeing 2020).

3.3.7.5 Advanced Stormwater Treatment

An Engineering Report for Advanced Stormwater Treatment at the DC was prepared in September 2018 (Geosyntec 2018). It evaluated treatment alternatives, proposed a treatment option, and described the selected treatment processes, operations, and expected results. The selected advanced treatment option was centralized vegetated media filter basins with engineered media. The media basins will consist of a lined filter basin containing vegetation for bioretention of contaminants and layers of engineered media, pea gravel, and large gravel for filtration of stormwater. Stormwater flows into the basin from an inflow pipe, contaminants and particles are filtered by the media and vegetation, and filtered stormwater exits at an outfall pipe to be directed to an existing outfall.

Four centralized media filter basins were selected to provide advanced stormwater treatment in a total of 16 of the 19 drainage areas. Consolidation of the 16 drainage areas into four areas (DC-2N, DC-5N, DC-9N, and DC-12N) is proposed; combined flows would discharge from outfalls DC2, DC5, DC9, and DC12, and most of the remaining outfalls would be decommissioned. Modeling indicated that consolidated drainage areas could handle flows from a large storm event. Design details of the

media filter basins, new conveyance lines and connections, new pump stations, and more are provided in the Advanced Stormwater Treatment report (Geosyntec 2018).

The following presents a tentative schedule for treatment system installation:

- **2021:** Complete area DC-5N.
- **2022:** Complete area DC-2N.
- **2023:** Complete area DC-9N.
- **2024:** Complete area DC-12N.

3.3.8 Gate J-28/Museum of Flight

The current location of the Museum of Flight West Campus was previously the Gate J-28 entrance to the DC facility and the location of former Building 9-04 (Figure 3). This portion of the DC (the northeast corner parcel of the facility) was transferred to the museum for the development of the West Campus of the Museum of Flight in 2002 (Ecology 2019a) following the site investigations described below.

3.3.8.1 Survey and Exploration for Buried Tanks

The north end of the DC site, including the location of current Building 9-08, Building 9-77, Slip 6, and a portion of the Museum of Flight is located on the property formerly known as Terminal 128. Shortly before Boeing purchased the Terminal 128 property, geophysical field surveys were performed to identify possible underground tanks at the site. The first survey was performed in December 1985 using ground-penetrating radar (GPR), but only half of the property was accessible at the time. GPR identified 15 underground features; three were known tanks and the other 12 were possible tank locations (LAI 1986a). Geophysical surveys and inspections of the remaining accessible portions of the property were performed in March and April 1986. These surveys used electromagnetic (E-M) survey techniques; it was designed to investigate the areas of the site that were previously inaccessible and to refine information regarding the possible tank locations identified using GPR. The E-M survey discovered that the locations identified using GPR did not exhibit magnetic properties and were not buried tanks. Other observations ruled out the other possible locations identified with GPR. The E-M surveys, inspections, and a review of records concluded that there were three known tanks, six possible tanks, and one possible spill location on the Terminal 128 property (LAI 1986a).

Subsurface explorations at the six possible tank locations were performed in April 1986 by a drilling company contracted directly through Boeing. Explorations were performed by drilling using continuous flight augers. Metal plates, smaller metals pieces, wire mesh, nails, cables, and other metallic objects were encountered; no objects resembling a tank were encountered (LAI 1986a).

Following geophysical surveys, surface inspections, and soil explorations, only three underground tanks were known to exist at the Terminal 128 property. Known tanks included one, 10,000-gallon

diesel tank used by Dallas-Mavis trucking company and two, 500-gallon gas and diesel fuel tanks. The 10,000-gallon tank and associated pump island were known to be in operation in 1986, but surface evidence at the time suggested that the two 500-gallon tanks had been removed, though no records of removal could be found (LAI 1986a). Prior to the transfer of property to the Museum of Flight, an additional investigation into the two smaller tanks was performed in March 2000. A depressed asphalt patch approximately the size of the tanks was observed in the suspected location of the tanks during inspection. Geophysical surveys including GPR, E-M, and other magnetometry methods were performed in the vicinity of the asphalt patch, but surveys provided no indication of USTs in the area. The investigation concluded that the two 500-gallon USTs had most likely been removed and that subsurface exploration to confirm removal was not beneficial (LAI 2000).

3.3.8.2 Discovery of Petroleum Contamination

In 1987, petroleum-contaminated soil was discovered in an excavation pit when Boeing was installing a communication utility vault near the Gate J-28 entrance. Thirty-three soil samples were collected from 11 soil borings in the vicinity of former Building 9-04 for field observations of contamination. Field observations indicated that the greatest contamination was in borings located closest to the eastern property boundary, suggesting migration from off site. Five soil samples were sent to a laboratory for analysis of TPH-D, which was detected in three of the five samples (Appendix F). All three samples with TPH-D detections were collected at a depth interval (8–10 ft bgs) that intercepted the top of the water table or were below the water table at the time the sample was collected. The two samples with the highest TPH-D concentration (2,500 mg/kg) were collected from borings located approximately 20–30 ft from the eastern property boundary. It was determined that TPH-D detected in the soil samples was associated with TPH-D detected in groundwater. It was also determined that, because of the proximity of the borings to the eastern property boundary, the source of the contaminated groundwater was located on a property immediately adjacent to and upgradient of former Building 9-04 (Figure 13; LAI 1987a). A former Enco (then ExxonMobil) gas station was located across East Marginal Way South from the Gate J-28 entrance and is a potential source of the contamination (SAIC 1994, Ecology 2014).

3.3.8.3 UST Removal and Remediation

A subsurface investigation was performed in January 1989 to determine if the activities of the Dallas-Mavis trucking company (current Museum of Flight property) on the Terminal 128 property had resulted in contamination. The investigation report recommended cleaning of stormwater catch basins and an oil/water separator, removal of the oil/water separator, removal of the 10,000-gallon UST and associated pump island, and removal of any contaminated soil associated with the tank and fuel system (LAI 1989).

Site remediation and tank removal was accomplished in July 1989. The 10,000-gallon tank, pump system, and associated piping were removed, decontaminated, and disposed. A soil excavation in the location of the tank and pump island was performed; the extent of excavation was based on visual

observation, odor, field screening, and chemical analysis. There was no evidence of leakage around the tank, but contamination was observed near the tank inlet pipe. Approximately 10 cubic yards of soil were removed near the tank and stockpiled for chemical analysis. Additional contamination was observed near the pump island; approximately 130 cubic yards of soil were removed near the pump island and segregated/stockpiled for chemical analysis (LAI 1989).

Confirmation samples were collected from all excavations related to removal of the 10,000-gallon tank to demonstrate that the TPH CUL at the time (200 mg/kg) had been achieved. The only sample to exceed the CUL was collected from the bottom of the tank excavation; TPH was detected at 880 mg/kg in this sample (Appendix F). Additional excavation was performed, and additional confirmation samples were collected. New samples demonstrated that the CUL had been achieved (Appendix F), and excavations were backfilled with clean, granular fill. Excavated areas were repaved with asphalt (LAI 1989).

3.3.8.4 Additional Investigations

In 2001, soil and groundwater samples were collected from 10 direct-push borings (B-1 through B-10) located at the Gate J-28 entrance of the DC facility as part of a Phase II ESA for the Museum of Flight (Figure 13; GeoEngineers 2001). Borings were drilled in the vicinity of suspected and known tanks, spills, and other areas of concern to confirm the results of the GPR and E-M surveys and other previous investigations. Soil and groundwater samples were analyzed for petroleum hydrocarbons. TPH-O was detected in one soil sample (B-9 at 8 ft bgs) at a concentration of 490 mg/kg, which exceeded the MTCA Method A CUL for soil of 200 mg/kg (Appendix F). Boring B-9 was located to the east of former Building 9-04 along East Marginal Way South. TPH-D was detected in a single groundwater sample (B-10) at a concentration of 6,000 µg/L, which exceeded the MTCA Method A CUL for groundwater of 1,000 µg/L (Appendix D); boring B-10 was located on the far east corner of the Museum of Flight property by former Building 9-04. TPH-D was not detected in any soil samples. At the location of the suspected spill identified with GPR (B-4), most compounds were not detected in soil and results did not suggest that a spill had occurred (Appendix F). As with the 1987 soil investigation, no sources of the TPH were identified on the former DC property (LAI 2004c).

Additional groundwater investigation was performed after the Phase II ESA. Activities included the installation and sampling of two groundwater monitoring wells (DC-MW-7 and DC-MW-8) near former Building 9-04 (Figure 13). Based on the results of this investigation, Ecology determined that the TPH in the soil did not pose a threat to human health or the environment. An NFA determination of was issued for the soil, but Ecology required additional groundwater monitoring. The groundwater monitoring requirements included the installation of an additional well (DC-MW-9) at the location of a former soil boring with the highest TPH-D groundwater concentration measured during the Phase II ESA (B-10; Figure 13). Ecology also required quarterly groundwater monitoring for TPH for a minimum of 1 year at all three wells (DC-MW-7, DC-MW-8, and DC-MW-9) following installation of DC-MW-9 in July 2001. Reports documenting well installation, baseline sampling, and groundwater monitoring

from 2001 to 2003 at all three wells (DC-MW-7, DC-MW-8, and DC-MW-9) were submitted to Ecology (LAI 2001, 2002a, 2003). After review of the quarterly monitoring data, Ecology requested semiannual monitoring for TPH at the three wells until TPH concentrations decreased below the MTCA Method A CULs. Semiannual sampling was performed from 2003 to 2004 at all three wells (DC-MW-7, DC-MW-8, and DC-MW-9). TPH-G and TPH-D concentrations at DC-MW-9 were still above the MTCA Method A CULs when sampling was discontinued in 2004 (Appendix D). Sampling was discontinued even though concentrations remained above CULs because it was determined that the TPH concentrations were stable and not likely to decrease until the off-property source was identified and removed (LAI 2004c).

Additional investigation of groundwater is planned for the DC-MW-9 area of the Museum of Flight property, after approval to perform the investigation is provided from the museum. The investigation will further evaluate the source and current nature and extent of contamination at this location. Results will determine if further action is necessary. A summary of the proposed additional investigation is discussed in Section 6.0.

3.3.9 Groundwater Seeps

Seeps had been previously identified along the shoreline of the DC, but none had been sampled as of 2010 (Windward Environmental [Windward] 2004, SAIC 2010). Seep sampling for site PCOCs was recommended to evaluate the potential for sediment recontamination from groundwater seeps along the LDW (SAIC 2010).

Seep location reconnaissance and sampling was performed along the LDW in 2018 (Windward 2018). Seven seeps were identified (SP-24, SP-26, SP-27, SP-28, SP-33, SP-35, and SP-37) along the shoreline of the DC during the reconnaissance (Figure 14). Only three seeps were sampled (SP-24, SP-33, and SP-35). Seep SP-26 was screened-out because groundwater and sediment data were abundant in the vicinity of the seep. The remaining three seeps (SP-27, SP-28, and SP-37) were not sampled because of limited accessibility or failure to meet QAPP sampling requirements (e.g., no flow, too saline). Seep samples were analyzed for total suspended solids (TSS), total organic carbon (TOC), dissolved organic carbon (DOC), metals, mercury, PAHs, PCBs, SVOCs, and dioxins/furans. Field measurements taken during sampling included conductivity, temperature, pH, DO, and turbidity. Arsenic, chromium, copper, lead, zinc, PAHs, and phthalates were detected in the three samples (Appendix E).

Sampling at all six groundwater seeps will be attempted in order to determine if PCOCs in site groundwater are reaching the LDW at concentrations of concern. This includes an attempt to resample the three locations sampled by Windward (Section 6.9). Notes of past reconnaissance observations and field measurements will be utilized to find the six seep locations, if possible. New, distinctly different groundwater seeps, if present, will also be identified and sampling attempted. Proposed additional investigation is discussed in Section 6.0.

3.3.10 Bank Soil Erosion

A review of current bank conditions along the DC property has shown that a portion of one parcel (King County Parcel No. 0003400018) includes an LDW shoreline bank area with a higher potential for shoreline area subsidence and soil erosion. This area includes bank property located to the south of Building 9-120, extending to the south of Building 9-140 (Figure 3). Other shoreline areas along the DC are either armored with riprap or are not owned by Boeing. Boeing is currently planning to improve this area of the property and the head of Slip 6 as a part of a bank stabilization project (Figure 3).

During the seep sampling reconnaissance, shoreline bank areas will also be observed and documented for signs of soil erosion. A summary of the proposed bank erosion sampling protocols is discussed in Section 6.0.

3.4 Ongoing Interim Actions and Monitoring Activities

Interim actions and monitoring activities continue in AOC-05, SWMU-17, and SWMU-20 under the new Agreed Order (No. DE 16275) issued for the DC on July 23, 2019 and per the IAWP (LAI 2019a). Additional injection to stimulate bioremediation of PCOCs is not needed in any of the areas at this time, but performance monitoring will continue to evaluate treatment progress. Monitoring occurs semiannually and in accordance with the sampling matrix presented in the IAWP (LAI 2019a).

4.0 CONCEPTUAL SITE MODEL

This section describes the conceptual site model (CSM) for the site, including the hydrogeologic conceptual site model and identification of contaminants, pathways, and receptors.

The hydrogeologic conceptual site model is based on a regional conceptual model of the Puget Sound lowland and information developed during previous investigations. Any further information regarding geology and hydrogeology obtained during additional investigations will be described in the RI report.

The CSM is further developed through identification of PCOCs at the site, areas at the site that have the greatest potential to be sources of contaminants, and the potential contaminant migration pathways and receptors. An updated CSM, incorporating the results and findings from the RI, will be developed and included in the RI report.

4.1 Geology

This section provides a description of the regional geology for the area and the local geology underlying the site. The regional geology is based on the regional conceptual model of the Puget Sound lowland (Dragovich et al. 1994, Galaster and Laprade 1991). Site geology has been largely interpreted from lithologic descriptions of soil collected from logs of soil borings and monitoring wells drilled at the DC or at adjacent properties between the years of 1967 and 2001 (LAI 2002b); however, lithology from more recent borings is consistent with these geologic interpretations.

4.1.1 Regional Geology

The DC is located within the Duwamish Valley lowland along the floodplain of the LDW. The Duwamish/Green River Valley is a relict subglacial meltwater channel eroded during the retreat of the Puget lobe of the most recent glaciation (Vashon Stade of the Fraser Glaciation) about 14,000 years ago. With the retreat of the lobe, the Duwamish/Green River Valley was occupied by a deep embayment of Puget Sound that extended inland to near present day Sumner, Washington. Marine sedimentation occurred in the embayment until about 5,000 years ago when a large volcanic mudflow off Mount Rainier, known as the Osceola Mudflow, swept down the Puyallup and White River Valleys, partially spilling into the Duwamish/Green River valley and out into Puget Sound. The mudflow traveled northward down the ancestral Duwamish/Green River valley to near present day Tukwila and the location of the DC. Subsequent channel incision and erosion resulted in increased sediment loads, river aggradation, and delta progradation that eventually filled the valley with freshwater sediments. In the last 100 years, the natural Duwamish River channel has been filled and channelized to create the present day morphology. The DC is located adjacent to one of these channel fill structures (Bortleson et al. 1980, LAI 2002b).

The general stratigraphic sequence within the Duwamish Valley lowland consists of recent Holocene (10,000 years to present) alluvial deposits overlying Pleistocene (10,000–2,000,000 years before present) glacial deposits. The Holocene alluvial deposits are typically more than 250 ft thick in the

valley; the thickness of the glacial deposits is unknown, but appears to be thin in places. Underlying the glacial deposits are deeper Tertiary sedimentary and volcanic rocks. In the vicinity of Tukwila and the DC, Tertiary bedrock outcrops near the surface, associated with uplift along the Seattle fault (Yount et al. 1985). Near the DC, the combined thickness of the marine sediments and freshwater Duwamish River alluvial sediments may be about 100 ft, but likely varies locally because of the buried bedrock topography (LAI 2002b).

4.1.2 Site Geology

Before the LDW was constructed by the USACE in about 1918, the Duwamish River meandered through the site area. At that time, the DC would have been situated on the inner curve of an old meander loop of the Duwamish River. Around 1918, the loop was filled with dredge spoils from the dredging of the current LDW (Bortleson et al. 1980). The geologic units encountered beneath the site include fill, underlain by Duwamish River alluvium, underlain by marine sediment. Fill material has been encountered at the DC in the upper 5–10 ft bgs and generally consists of brown fine-to-medium sand with occasional gravel and silt (LAI 2002b).

Beneath the fill material is a layer of naturally-deposited Duwamish River alluvium approximately 30–40 ft thick. The uppermost portion of this alluvium consists of brown and gray sand and silt with occasional red mottling. This portion of the alluvium is often difficult to distinguish from the overlying fill material. At approximately 10–20 ft bgs, the alluvium becomes a dark gray fine-to-medium sand characteristic of reworked Osceola Mudflow deposits. This sand becomes increasingly silty with depth. In the northern portion of the DC (near Building 9-77) a layer of black gravelly coarse sand approximately 2–8 ft thick is present beginning at approximately 20 ft bgs. At the northwest corner of Building 9-101, a layer of silt and silty sand approximately 3–5 ft thick is present beginning at about 30 ft bgs (LAI 2002b).

The freshwater (Duwamish River) alluvium is underlain by marine sediments consisting of dark gray silt and silty clay overlying coarser sand deposits. The top of the silt/clay is generally encountered at approximately 50 ft bgs and is approximately 20–30 ft thick. The silt layer appears to be laterally contiguous across the site. The top of the marine sands is generally encountered at approximately 80 ft bgs. Underlying the sand deposit is a deeper marine layer of silty gravelly sand with shell fragments. A single onsite exploration (monitoring well MW-14E) penetrated through the silt/clay layer into the marine sand. No onsite explorations have been drilled into the deeper silty gravelly sand. Geologic cross-sections based on historical boring logs are provided on Figures 15 (locations of each cross section), 16, 17, 18a, and 18b. .

4.2 Hydrogeology

This section provides a description of the regional hydrogeology for the area and the local hydrogeology underlying the site. The site hydrogeology has been largely interpreted from monitoring

wells drilled at the DC or at adjacent properties between the years of 1967 and 2001 (LAI 2002b); however, data from wells installed after 2001 are consistent with this interpretation.

4.2.1 Regional Hydrogeology

The LDW is a regional lowland stream that represents a regional groundwater discharge zone. In the vicinity of the DC, the river is separated from Puget Sound to the west by the West Seattle and Des Moines Uplands, and from Lake Washington to the east by Beacon Hill and the Skyway Upland (Galaster and Laprade 1991). Regional horizontal groundwater flow is from these upland areas toward the river and Elliot Bay. Regional vertical groundwater flow is upward from deep aquifers to the shallow aquifer near the LDW, and toward the river in the valley lowland, resulting in groundwater discharge. In the shallow aquifer, groundwater in the valley lowland is typically part of a local groundwater system, with flow predominantly horizontal and toward the river. The portion of the LDW adjacent to the DC is tidally influenced, which has a local, temporal effect on groundwater flow (LAI 2002b). A hydrogeologic CSM is presented on Figure 19; regional and local groundwater gradients are depicted for the area near the DC.

Groundwater from the DC flows west and south to the LDW and does not impact any water supply wells. Two municipal supply wells are located within 1 mile of the DC, but on the opposite side of the LDW. Given their locations upgradient from the line of groundwater discharge to the LDW, neither well can be impacted by any DC groundwater PCOCs. Water rights exist for domestic and/or irrigation wells in sections east and south of the site, but none of these is located within the two sections occupied by the DC (T23N, R4E, Section 4 and T24N, R4E, Section 33) and locations are upgradient or cross-gradient from the DC (LAI 2002b).

4.2.2 Site Hydrogeology

Hydrogeology at the site consists of two aquifer units separated by an aquitard, which is comprised of a silt/clay layer on top of a marine sediment sequence. The shallow aquifer is typically characterized as unconfined saturated Duwamish alluvial sediments. Where Duwamish River alluvium becomes silty, (at the northwest corner of Building 9-101) the shallow aquifer exhibits more semiconfined characteristics. The deep confined aquifer consists of marine sand deposits beneath the silt/clay aquitard (LAI 2002b). The aquifer and aquitard units are discussed in detail in following sections.

4.2.2.1 Shallow Unconfined Aquifer

A shallow unconfined aquifer existed beneath the site with the water table at a depth of approximately 10–12 ft bgs. The shallow unconfined aquifer is about 40-ft thick and segregated into three depth intervals, which are defined as horizons A, B, and C (LAI 1992, Tetra Tech 1996). Groundwater elevation contours from May and November 2019 (Figures 20 and 21, respectively), indicate west horizontal groundwater flow toward the LDW in the shallow aquifer, consistent with past observations.

Historically, hydraulic gradients at the site have ranged from approximately 0.0004 to 0.0008 feet per foot (ft/ft; LAI 2002b). An increase in site-wide average water levels combined with a fairly consistent mean tide level in the LDW suggests an increase in hydraulic gradient at the DC toward the LDW. Groundwater elevation data over the last five years (Appendix H) reflects this change; average groundwater elevations have increased by approximately 0.2–0.3 ft. The current hydraulic gradient at the site is estimated at approximately 0.001–0.005 ft/ft.

A distinct, discontinuous silt layer is present at approximately 25 ft bgs near the northwest corner of Building 9-101. Underlying the silt layer is approximately 8 ft of Duwamish River alluvium. This specific area and depth interval was termed the D horizon of the shallow aquifer (LAI 1992, Tetra Tech 1996). D horizon water levels have larger tidal fluctuations then other portions of the shallow aquifer, indicating semiconfined conditions.

Groundwater elevations in the shallow aquifer appear to vary approximately 0.5–1 ft seasonally with precipitation changes, and tidal influence is less than 1 ft. Tidal influence on groundwater elevations (approximately 0.4 ft) was observed in the shallow unconfined aquifer (A, B, and C horizons) near Building 9-101 and SWMU-20 in a 45-hour period (Tetra Tech 1996). A minimal (up to 0.04 ft) groundwater elevation change was observed in monitoring wells in SWMU-17 during a 12-hour period (LAI 1987b). Tidal influence on groundwater elevations does not appear to extend east of AOC-03/04 and SWMU-20. At the north end of the site, tidally-influenced groundwater elevation fluctuations have been observed in monitoring wells in the vicinity of Slip 6, but this effect does not appear to extend south to AOC-01/02 (LAI 1986b). In the D horizon, a tidally influenced groundwater elevation change of approximately 0.75 ft was observed in the vicinity of SWMU-20 during a 45-hour period (Tetra Tech 1996).

Groundwater elevations in clustered wells screened at different depths within the shallow unconfined aquifer show minor head differences but exhibit no consistent trend. This suggests that there are no prominent vertical gradients within the shallow unconfined aquifer in the vicinity of the site and that groundwater flow is primarily horizontal (LAI 2002b). A hydrogeologic investigation was performed by Boeing in 2004 that included a vertical gradient investigation at well clusters at Boeing Plant 2 (located approximately 1 mile north of the DC along the LDW); each cluster included monitoring wells screened at different depths, ranging from 10 to 60 ft bgs. A vertical gradient as observed at well clusters located closest to the LDW (located 70–520 ft from the LDW), while a downward gradient was observed at well clusters located farthest from the LDW (located 940–1,050 ft from the LDW). The study concluded that “on the eastern side of the Central Valley the Duwamish Valley Aquifer is a recharge zone (downward vertical gradient) from the valley wall to at least as far west as East Marginal Way South and that the aquifer transitions to a discharge zone (upward vertical gradient) approximately 500 ft and closer to the [LDW]” (Floyd|Snider and Aspect 2014). Evaluation of available data suggests that the gradient is horizontal across the eastern portion of the DC (greater than 500 ft from the LDW), including SWMU-20. A regional and local hydrogeologic CSM demonstrating these gradients is presented on Figure 19. Horizontal groundwater velocity measurements are calculated

from hydraulic gradient, hydraulic conductivity, and porosity estimates using Darcy's law. The recent hydraulic gradient in the regularly monitored portion of the site (near AOC-05, SWMU-17, and SWMU-20; Figures 20 and 21) ranges from approximately 0.001 to 0.005 ft/ft. An aquifer transmissivity range of 1.91–2.28 square feet per minute (ft^2/min) and a hydraulic conductivity range of 110–130 feet per day (ft/day) were calculated from pumping test data (Tetra Tech 1996). Based on these parameter values and an assumed effective porosity of 0.25, the average groundwater flow velocity is approximately 161–950 ft per year.

4.2.2.2 Confining Unit

A marine silt to silty clay unit approximately 20–30 ft thick acts as an aquitard to separate the shallow unconfined aquifer from a deeper aquifer. The silt unit appears to be laterally contiguous across the site and acts as a confining layer for the deeper aquifer (LAI 2002b).

4.2.2.3 Deep Confined Aquifer

A deep aquifer is present in the marine sands that underlie the confining unit. Monitoring well MW-14E located in SWMU-20 is the only site well screened in the deep aquifer. Comparing groundwater elevations between this well and adjacent wells in the shallow zone indicate a distinct upward gradient from the deep to the shallow aquifer. Offsite investigations indicate that groundwater flow in the deep aquifer is generally northward toward Elliot Bay. Additionally, the permeability of the deep aquifer appears to be relatively low based on the rate of recharge at monitoring well MW-14E (LAI 2002b).

4.2.3 Surface Water

The DC is located on the east bank of the LDW, approximately 4.5 miles upstream of its mouth on Elliott Bay (SAIC 1994). The LDW is the line of discharge for site groundwater from the shallow unconfined aquifer and for potential groundwater discharging upward from the deeper confined aquifer. Surface drainage from the DC is routed to the LDW through a stormwater drainage system (see Section 3.3.7).

The LDW is a salt-wedge estuary, characterized by a mixed wedge of ocean water underlying a series of increasingly dilute (upstream) water layers introduced by fresh river water (US Geological Survey [USGS] 1974). The location of the upstream end of the salt wedge is typically near where East Marginal Way South crosses the Duwamish River (Figure 1) and is a function of river discharge and tidal stage (Dawson and Tilley 1972). The DC is slightly downstream of the East Marginal Way Bridge and is typically in contact with the salt wedge. The DC is occasionally not in contact with the salt wedge when very low tides and very high stream discharges occur simultaneously. During very high stream discharge events, the groundwater flow from the site is expected to have minimal contribution to total LDW stream flow.

The LDW water column adjacent to the DC, at zero tide, consists of approximately 10 ft of brackish water on top of 20 ft of salt water (LAI 1986b). The average annual discharge of the LDW into Elliot Bay was previously estimated at 1660 cubic feet per second (ft^3/s; SAIC 1994). The lowest flows are anticipated to occur in August, and the highest flows are anticipated to occur in December and January (LAI 2002b).

4.3 Potential Contaminants of Concern and Sources

Site PCOCs are contaminants associated with the potential sources identified in Section 3.0 that have been detected during previous investigations or remedial actions at the DC, or that are suspected to be present based on available information. The PCOCs consist primarily of VOCs, metals, PCBs, and petroleum hydrocarbons. The specific PCOCs for each area under further investigation are as follows:

- PCOCs at AOC-01/02 are:
  - Petroleum hydrocarbons (TPH-D and TPH-G)
  - BTEX
  - Metals (cadmium and copper)
- PCOCs at AOC-03/04 are:
  - Petroleum hydrocarbons (TPH-D and TPH-O)
- PCOCs at AOC-05 are:
  - Petroleum hydrocarbons (TPH-G)
  - BTEX
  - Nitrate and nitrite (nitrate injected for *in situ* bioremediation)
- PCOCs at SWMU-16 are:
  - VOCs
  - Metals
  - PCBs
  - PAHs
- PCOCs at SWMU-17 are:
  - Chlorinated VOCs (PCE, TCE, cDCE, and VC)
  - Metals (arsenic and copper)
  - Petroleum hydrocarbons
- PCOCs at SWMU-20 are:
  - Chlorinated VOCs (PCE, TCE, cDCE, and VC)
  - Benzene
  - Naphthalene

- PCOCs for the stormwater sewer system (SWMU-43) are:
  - VOCs
  - Metals (copper and zinc)
  - Petroleum hydrocarbons (TPH-D)
  - PCBs
  - PAHs
- PCOCs for Gate J-28/Museum of Flight are:
  - Petroleum hydrocarbons
- PCOCs for site groundwater seeps and soil bank erosion along the LDW are:
  - VOCs
  - Metals (arsenic)
  - Petroleum hydrocarbons
  - PCBs
  - PAHs.

4.4 Contaminated Media of Potential Concern, Contaminant Migration, Receptors, and Exposure Pathways

This section discusses receptors, media of potential concern, migration and transport of potentially contaminated media, and exposure pathways at the DC.

4.4.1 Human and Ecological Receptors

The DC is zoned for heavy industrial land use, and the primary site use is industrial with the primary receptors being adult workers. Adult workers include both people working at the site long-term and temporary contractors.

The DC and surrounding areas are highly urbanized/industrialized, including the adjacent Boeing Field (King County International Airport). Contamination at the site is primarily covered by pavement and other physical barriers, except potentially along the shoreline of the LDW. Wildlife may be present along the shoreline but is generally not present throughout the rest of the site.

As part of the RI/FS process, Ecology requires that a Terrestrial Ecology Evaluation (TEE) be performed for all sites, per WAC 173-340-7490. The goal of the TEE process is to protect terrestrial ecological receptors from exposure to contaminated soil with the potential to cause significant adverse effects, including breeding, feeding, growth, and survival. In order to fulfill the requirements of the TEE process, one of the following actions must be taken:

- Document an exclusion from any further TEE using the criteria in WAC 173-340-7491
- Conduct a simplified TEE per WAC 173-340-7492

- Conduct a site-specific TEE per WAC 173-340-7493.

An initial evaluation suggests that the DC may qualify for an exclusion from the TEE process because of the highly developed nature of the site and the potential that most soil contamination is covered by buildings, pavement, and other physical barriers. The results of the RI will be used to confirm if the DC qualifies for an exclusion or perform a simplified TEE, if it becomes necessary. The TEE process, including exclusion evaluation, will be documented in the RI report (Section 7.0).

4.4.2 Contaminated Media and Potential Exposure Pathways

Contamination is present or potentially present in building materials, stormwater, soil, groundwater, soil gas/indoor air, and airborne particles. Past or present site contamination may also present a potential source of contamination to adjacent surface water and/or sediments in the LDW offshore of the DC site. Possible exposure and migration pathways for the potentially contaminated media are summarized in the following sections. Not all site media listed will be subject to further investigation. A CSM showing contamination sources and transport, affected media, and exposure pathways is presented on Figure 22.

4.4.2.1 Building Materials

Contaminants may be present in building materials. Potential migration pathways for contaminants in building materials include:

- Breakdown to particulates.
- Wind and water transport of particles to stormwater and groundwater.
- Transport to LDW surface water and sediments.

4.4.2.2 Stormwater

Contaminants may be present in stormwater. Potential migration pathways for contaminants in stormwater include:

- Leaching of contaminants to soil and groundwater via cracks or other failures in the stormwater sewer system.
- Transport to LDW surface water and sediments.

Migration pathways for stormwater discharges to the LDW continue to be evaluated and addressed in accordance with the requirements of the ISGP, the Administrative Order, and the Agreed Order for stormwater treatment (Section 3.3.7.4).

4.4.2.3 Soil

Contaminants may be present in soil. Potential exposure and migration pathways in shallow soil include:

- Direct contact including incidental ingestion or dermal contact by construction workers with hazardous substances that are present in subsurface soil.
- Inhalation of hazardous substances that are present in soil by site industrial workers through windblown dust during construction activities.
- Leaching of contaminants from soil to groundwater, and ultimately to LDW surface water.
- Migration of contaminated soil particles to stormwater via cracks or other failures in the stormwater sewer system and discharge to LDW surface water.
- Erosion of bank soils to LDW sediment.

4.4.2.4 Groundwater

Contaminants may be present in shallow groundwater. Potential exposure and migration pathways for shallow groundwater include:

- Incidental ingestion and dermal contact by construction workers of hazardous substances that are present in groundwater.
- Migration of contaminated shallow groundwater to stormwater via cracks or other failures in the stormwater sewer system and discharge to LDW surface water.
- Migration of contaminated shallow groundwater to LDW surface water and sediments.
- Partitioning of contaminants from groundwater to shallow soil gas and then, potentially, to indoor air.

Groundwater in the vicinity of the DC is non-potable, as described in Section 2.3.

4.4.2.5 Soil Gas/Indoor Air

Contaminants may be present in soil gas, with potential migration to indoor air. Potential exposure and migration pathways for soil gas include:

- Migration of contaminants in soil gas to excavations, utilities, or indoor air.
- Inhalation of hazardous substances in excavations or existing utilities by utility workers.
- Inhalation of hazardous substances in indoor air by site industrial workers.

4.4.2.6 Airborne Particles

Contaminants may be present as airborne particles. Potential exposure and migration pathways for airborne particles include:

- Atmospheric deposition on impervious surfaces and migration to LDW surface water via the stormwater sewer system.
- Inhalation of airborne particles by site industrial workers.

Airborne particle migration is being managed under stormwater Agreed Order No. 15600. Advanced stormwater treatment is discussed in Section 3.3.7.7 of this work plan.

4.4.2.7 LDW Sediments and Surface Water

Past or present site contaminants may be a potential source of contamination to surface water adjacent to the site and/or offshore LDW sediments through the migration pathways described above. Potential exposures are as follows:

- Exposure of aquatic and benthic organisms.
- Human consumption of aquatic organisms.

5.0 SCREENING LEVELS

Screening levels are concentrations established for each compound and medium of potential concern for evaluation of RI data. Screening levels are typically established at the most conservative regulatory concentrations in order to ensure that adequate investigation and appropriate analytical methods are employed. Screening levels are not CULs; CULs are typically developed during the FS to account for specific exposure scenarios and are often different than the screening levels for a particular compound or medium. Cleanup standards developed during the FS phase include CULs, the point of compliance (POC; location where CULs must be met), and other regulatory requirements that apply to a site.

Preliminary groundwater and soil screening levels were developed in 2002 for the Summary Report (LAI 2002b). Groundwater screening levels were developed to be protective of beneficial use of groundwater as surface water, based on the determination that the groundwater at the DC is non-potable. The MTCA Method B CULs for marine surface water and fresh water were selected as the preliminary groundwater screening levels. Preliminary soil screening levels were developed using MTCA Method C CULs for industrial properties; levels were protective of groundwater and direct human contact (LAI 2002b).

Cleanup standards for groundwater and indoor air were developed and proposed for the DC in 2013 based on updated criteria (LAI 2013). The 2013 proposed CULs for several PCOCs have been used to evaluate cleanup progress in the three areas of the DC where interim actions continue (AOC-05, SWMU-17, and SWMU-20).

In this work plan, updated screening levels are adopted for soil and groundwater. These new screening levels are Ecology CULs for upland MTCA sites that have environmental transport pathways to the LDW (Ecology 2019b), referred to as the 2019 LDW preliminary cleanup levels (PCULs). The 2019 LDW PCULs will be used as screening levels for the completion of the RI at the Boeing DC. However, several LDW PCULs are below concentrations achievable by current analytical methods (i.e., parts per quadrillion range). For those analytes, the screening level for the completion of the RI has been adjusted up to meet the practical quantitation limit (PQL). All proposed screening levels for the RI are presented in Table 3.

6.0 SUMMARY OF ADDITIONAL INVESTIGATION

As summarized in Section 1.2 and described in detail in Section 3.3, investigation of soil and groundwater at the Boeing DC will be performed to further evaluate the nature and extent of contamination in identified areas for the completion of the RI. Data will be used to determine if additional action is warranted. Completion of the RI will support FS evaluation of remedial alternatives and selection of a final remedy, if necessary. Areas where additional investigation will be performed to complete the RI are presented on Figure 3. Results from the RI will be compared to the screening levels presented in Table 3.

General investigation activities are presented in the table below and a more detailed summary is provided in Table 4. All proposed sampling locations are presented on Figure 23.

Investigation Area	Description	Media Investigated for Remedial Investigation	
		Soil	Groundwater
AOC-01/02	Former fuel USTs	x	x
AOC-03/04	Former No. 5 oil USTs	x	x
AOC-05	Former unleaded gasoline UST	x	
SWMU-16	Former regulated materials storage area	x	x
SWMU-17	Former sump and UST	x	
SWMU-20	Former degreaser pit	x	x
SWMU-43	Stormwater sewer system	x	x
Gate J-28/Museum of Flight	Offsite historical petroleum release		x
Groundwater Seeps	Site groundwater discharge to the LDW		x
Bank	Soil erosion	x	

Detailed descriptions of each sampling activity are provided in the SAP (Appendix A). Additional activities will be proposed, if warranted, based on the results from the original proposed RI activities.

The general scope of the proposed investigation is as follows:

- Collection and analysis of groundwater samples from existing wells, with monitoring well redevelopment and repair, as needed.
- Completion of utility locating prior to drilling activities.
- Collection and analysis of soil and groundwater grab samples from soil borings in select investigation areas.

- Collection and analysis of grab samples from each of the identified groundwater seeps along the LDW. Activities will include:
  - Reconnaissance of previously identified locations of groundwater seepage to determine if locations are accessible and meet necessary requirements for sampling.
  - Reconnaissance of new and distinct locations of groundwater seepage not identified during previous investigations.
  - Collection and laboratory analysis of groundwater samples from all accessible seeps that meet sampling requirements.
- Collection and analysis of grab samples from areas of identified bank erosion along the DC facility boundary with the LDW.
- Additional phase(s) of investigation based on evaluation of initial RI data. Activities may include, but are not limited to:
  - Evaluation of site groundwater and stormwater interaction by comparing groundwater elevations collected during earlier phase(s) of the RI to stormwater system invert elevations. A figure to visualize this interaction will be developed.
  - Installation, development, and sampling of new groundwater monitoring wells.
  - Collection and analysis of soil, soil gas, and/or groundwater samples from additional direct-push borings.
  - Indoor air sampling for vapor intrusion evaluation.

During investigation activities, if any archaeological resources are discovered, work at the sampling location will be immediately stopped and Ecology, the Washington State Department of Archaeology and Historic Preservation (DAHP), King County, and the appropriate Tribes' cultural resources departments will be notified by the close of business on the day of discovery. Notification will be followed by inspection by a licensed archaeologist to document the discovery, provide a professionally documented site form, and report to the above-listed parties. In the event of an inadvertent discovery of human remains, work will be immediately halted in the discovery area, the remains will be covered and secured against further disturbance, and the King County Sheriff's Office and King County Medical Examiner will be immediately contacted, along with the DAHP physical anthropologist and authorized Tribal representatives. A licensed archaeologist will then develop a treatment plan in consultation with the above-listed parties consistent with Chapters 27.44 and 27.53 of the Revised Code of Washington (RCW) and implemented in accordance with Chapter 25-48 WAC.

6.1 AOC-01/02: Former Fuel USTs

Additional investigation of soil and groundwater at AOC-01/02 will be performed to confirm that no further action is necessary. New data collected will determine if contaminants related to the leaking USTs remain below screening levels and/or detection limits in both media.

Additional soil and groundwater investigation will be performed in AOC-01/02 to resolve the following data gaps identified by Ecology:

- No soil sampling has been performed since the tank replacement in 1990. Soil sampling for TPH and BTEX was performed during the excavation and replacement of the former USTs in June 1990. TPH was not detected and BTEX was detected below the preliminary screening levels in prior samples.
- Groundwater sampling for TPH-D, TPH-G, PCBs, and metals at three existing monitoring wells (DC-9-52-1, DC-9-52-2, and DC-9-52-3) was discontinued in 2002. Ecology deemed no further action was required in this area after TPH-D, TPH-G, and BTEX concentrations at all three wells remained below the detection limit for two consecutive monitoring events.
- The vapor intrusion pathway has not been fully evaluated at buildings in the vicinity of AOC-01/02.

The objectives of additional investigation in this area are to:

- Determine if TPH-D, TPH-G, and BTEX concentrations are below current screening levels in both soil and groundwater.
- Evaluate the potential for vapor intrusion in Building 9-51.
- Confirm that no further action is necessary in AOC-01/02.

The soil investigation at AOC-01/02 will consist of collecting soil samples from two soil borings (RISB-1 and RISB-2; Figure 24). The soil borings will be drilled using direct-push methods. Composite soil samples will be collected from three intervals (approximately 7–10 ft bgs, 10–13 ft bgs, and 13–16 ft bgs) in order to measure potential contaminant mass remaining in the "smear zone" above the water table and mass remaining below the water table. A maximum of three soil samples are anticipated at each boring location. Samples will be analyzed for VOCs, TPH-G, and TPH-D/O, per Table 4.

The groundwater investigation at AOC-01/02 will involve redeveloping and sampling three existing monitoring wells (Figure 24). A site reconnaissance in September 2019 determined that three existing monitoring wells (DC-9-52-1, DC-9-52-2, and DC-9-52-3) are still present and suitable for sampling (i.e., monument and lid remain intact, casing is not damaged, etc.). These wells will be redeveloped prior to collecting groundwater samples. Groundwater samples collected from existing monitoring wells will be analyzed for VOCs, TPH-G, TPH-D/O, total/dissolved metals, and total/dissolved mercury, in accordance with Table 4.

Soil and groundwater data collected as part of this RI near buildings will be used to evaluate vapor intrusion according to Ecology vapor intrusion guidance (Ecology 2018). Vapor intrusion assessment follows a tiered approach, beginning with a preliminary assessment to identify whether the potential for vapor intrusion exists at the site, and, if it does, which buildings may be affected. The preliminary assessment using data collected during the RI will determine if additional assessment steps (Tier I and Tier II) are necessary. The scope of potential additional soil vapor intrusion assessment will be documented as an amendment to this RIWP.

6.2 AOC-03/04: Former No. 5 Oil USTs

Additional investigation of soil and groundwater will be performed in AOC-03/04 to confirm that further action is not necessary. Results of the investigation will determine if contaminants related to the leaking USTs remain below screening levels and/or detection limits in both media.

In AOC-03/04, additional soil and groundwater investigation will be performed to resolve the following data gaps identified by Ecology:

- Soil sampling for TPH has not been performed since 1992, during the excavation and replacement of the former USTs. A small area of soil remained at the base of the excavation with concentrations of TPH above the preliminary screening level.
- Soil sampling for TPH was also performed in 1992 during installation of one monitoring well (MW-21A) in the vicinity of the USTs. TPH was not detected in the soil sample. Additional soil sampling was not performed in AOC-03/04.
- Groundwater sampling for VOCs and TPH-D at two existing monitoring wells (MW-21A and MW-21C) was discontinued in 2002 after TPH-D and TPH-O concentrations were non-detect for four consecutive semiannual monitoring events.

The objectives of further investigation in this area are to:

- Determine if TPH-D and TPH-O concentrations are below current screening levels in both soil and groundwater.
- Confirm that no further action is necessary in AOC-03/04.

The soil investigation at AOC-03/04 will consist of collecting soil samples from two soil borings (RISB-3 and RISB-4) using direct-push methods (Figure 25). Soil samples will be collected at three intervals (approximately 7–10 ft bgs, 10–13 ft bgs, and 13–16 ft bgs) in order to measure potential TPH mass remaining in the "smear zone" above the water table and mass remaining below the water table. A maximum of three soil samples are anticipated at each location. Soil samples will be analyzed for TPH-D/O, as described in Table 4.

The groundwater investigation at AOC-03/04 will involve sampling two existing monitoring wells (MW-21A and MW-21C; Figure 25) for analysis of TPH-D/O, in accordance with Table 4.

6.3 AOC-05: Former Unleaded Gasoline UST

Additional soil investigation will be performed in AOC-05. Semiannual groundwater sampling in this area continues per the IAWP (LAI 2019a); further groundwater investigation is not proposed. Additional soil investigation aims to resolve the following data gap identified by Ecology:

- No soil sampling has been performed in the vicinity of the former UST. Floating product was removed from the excavation during tank removal, and additional contamination was removed in excavated soil. There are no data to confirm that source material for TPH in groundwater has been completely removed in soil from AOC-05.

The objectives of further investigation in this area are to:

- Evaluate current soil conditions in the former tank area.
- Determine if soil is a media of concern and requires further cleanup action.

Samples for the soil investigation in AOC-05 will be collected from two soil borings (RISB-5 and RISB-6) drilled using direct-push methods in the vicinity of the former UST and existing monitoring wells BDC-103 and BDC-104 (Figure 26). In order to measure potential contaminant mass remaining in the "smear zone" above the water table and mass remaining below the water table, soil samples will be collected at three intervals (approximately 7–10 ft bgs, 10–13 ft bgs, and 13–16 ft bgs). A maximum of three soil samples are anticipated. Samples will be analyzed for VOCs and TPH-G, as shown in Table 4.

6.4 SWMU-16: Former Regulated Materials Storage Area

Further investigation in SWMU-16 will focus on both soil and groundwater. Detections of PCBs in soil beyond the boundary of the former waste management unit prompted a groundwater investigation in 2001. All groundwater samples were non-detect for PCBs, and it was concluded that PCBs in soil were not impacting groundwater. While there are no present concerns that potential residual contamination is impacting groundwater, a sample will be collected from a nearby existing well.

The following data gap identified by Ecology will be addressed by additional soil investigation:

- Soil sampling for VOCs, PCBs, PAHs, and metals has not been performed since the investigation for the Building 9-69/70 RCRA Closure Plan in 1996. Total PCBs in soil beneath the former building exceeded the applicable MTCA Method A CULs. Contaminated soil was excavated and all concrete underlying the facility was removed. PCBs were also detected beyond the boundary of the former waste management unit but were below CULs.

The objectives of the RI field investigation in this area are to:

- Evaluate potential residual contamination in soil and groundwater.
- Determine if further cleanup action is necessary.

Samples for the soil investigation in SWMU-16 will be collected from two soil borings (RISB-7 and RISB-8) drilled using direct-push methods and located hydraulically downgradient of the excavation area and beneath the former storage area (Figure 27). Soil samples will be collected approximately every 3 ft starting at the water table (measured at the time of drilling) and extending to 15 ft below the water table. This sampling interval is consistent with prior PCB soil investigations in SWMU-16. A maximum of five soil samples are anticipated per location. Soil samples will be analyzed for VOCs, PCBs, PAHs, and total metals as described in Table 4. All PCB soil samples in SWMU-16 will be collected as split samples; LAI will submit one sample to the primary analytical laboratory for analysis of PCB Aroclors by EPA Method 8082A and will provide the second sample to Ecology to hold for potential analysis of PCB Congeners by EPA Method 1668C at a laboratory of its choice.

The groundwater investigation at SWMU-16 includes sampling one existing monitoring well (BDC-05-05; Figure 27), which will be redeveloped prior to collecting groundwater samples. Groundwater will be analyzed for VOCs, PCBs, PAHs, and total/dissolved metals, per Table 4. The PCB groundwater sample in SWMU-16 will be collected as a split sample; LAI will submit one sample to the primary analytical laboratory for analysis of PCB Aroclors by EPA Method 8082A and will provide the second sample to Ecology to hold for potential analysis of PCB Congeners by EPA Method 1668C at a laboratory of its choice. Appropriate groundwater sampling procedures for EPA Method 1668C will be followed, according to the SAP (Appendix A).

6.5 SWMU-17: Former Sump and UST

Additional soil investigation will be performed in SWMU-17. Additional groundwater investigation is not necessary, because semiannual groundwater sampling in SWMU-17 continues per the IAWP (LAI 2019a). After reviewing past investigation data and observations, the following data gap identified by Ecology will be addressed by the soil investigation:

- Soil data is not available after 1986, when soil was sampled during the installation of monitoring well BDC-05-02 near the former UST. Certain VOCs and metals were detected, indicating that the contamination in SWMU-17 was related to solvents and not hydrocarbons, as previously expected. However, soil samples were not analyzed for current groundwater contaminants PCE, TCE, cDCE, and VC. There is no soil data for these PCOCs.
- The vapor intrusion pathway has not been fully evaluated at buildings in the vicinity of the SWMU-17 contamination.

The objectives of the RI field investigation in this area are to:

- Evaluate potential chlorinated VOC and TPH contamination in soil.
- Evaluate the potential for vapor intrusion in Buildings 9-53 and 9-98.
- Determine if further action is necessary.

The soil investigation in SWMU-17 will involve collecting samples from two soil borings (RISB-9 and RISB-10) drilled using direct-push methods. The borings will be located in the vicinity of the former sump and UST area (Figure 28). Soil samples will be collected at three intervals (approximately 7–10 ft bgs, 10–13 ft bgs, and 13–16 ft bgs). Prior groundwater investigations confirmed a source and that contamination was confined to the shallow interval above approximately 18.5 ft bgs. A maximum of three soil samples are anticipated. Soil samples will be analyzed for TPH-G, TPH-D/O, VOCs and total metals, as described in Table 4.

Soil and groundwater data collected as part of this RI near buildings will be used to evaluate vapor intrusion according to Ecology vapor intrusion guidance (Ecology 2018). Vapor intrusion assessment follows a tiered approach, beginning with a preliminary assessment to identify whether the potential for vapor intrusion exists at the site, and, if it does, which buildings may be affected. The preliminary assessment using data collected during the RI will determine if additional assessment steps (Tier I and

Tier II) are necessary. The scope of potential additional soil vapor intrusion assessment will be documented as an amendment to this RIWP.

6.6 SWMU-20: Former Degreaser

Additional investigation in SWMU-20 will focus on soil potentially still affected by the former degreaser. Further groundwater investigation is not necessary, because semiannual groundwater sampling for chlorinated VOCs and naphthalene in SWMU-20 continues per the IAWP; however, naphthalene detections in groundwater will be evaluated further during the RI (LAI 2019a). The following data gaps identified by Ecology will be addressed by additional investigation:

- Soil has not been sampled since the Phase III ESA was performed in 1991. Frequently-detected compounds in soil were PCE, TCE, cDCE, and VC, with a majority of the highest concentrations measured between approximately 12 and 18 ft bgs.
- Though the previous soil investigations were extensive, samples were not analyzed for naphthalene. The source of naphthalene in groundwater in the vicinity of Building 9-101 has not been identified.
- The vapor intrusion pathway has not been fully evaluated at buildings in the vicinity of the SWMU-20 contamination.

The objectives of the RI field investigation in this area are to:

- Evaluate potential residual chlorinated VOC contamination in soil near the former degreaser.
- Evaluate naphthalene concentrations in soil and groundwater and evaluate the presence of a possible source.
- Evaluate the potential for vapor intrusion in Building 9-101.
- Determine if further cleanup action is necessary.

Samples for the soil investigation in SWMU-20 will be collected from four soil borings (RISB-11, RISB-12, RISB-13, and RISB-14) drilled using direct-push methods; borings will be located near the corner of Building 9-101 in the vicinity of the former degreaser (Figure 29) and outside the extent of excavation for pile cap construction. Soil samples will be collected approximately every 3 ft from 7 to 25 ft bgs in order to measure potential contaminant mass remaining in soil above and below the elevation of the bottom of the former degreaser pit, which was located at approximately 10 ft bgs. A maximum of six soil samples are anticipated at each location. Soil samples will be analyzed for VOCs, as described in Table 4. The analytical method for VOCs also detects naphthalene.

The groundwater investigation at SWMU-20 includes the collection of grab samples from the four planned borings (RISB-11, RISB 12, RISB-13, and RISB-14) and sampling three existing wells (MW-8C, MW-15A, and MW-22A; Figure 29). While well MW-22A is currently sampled semiannually, it has been several years since wells MW-8C and MW-15A have been sampled; thus, both of those existing wells will be redeveloped prior to sampling. Groundwater samples collected from both the above mentioned borings and existing wells will be analyzed for PAHs, in accordance with Table 4.

Soil and groundwater data collected as part of this RI near buildings will be used to evaluate vapor intrusion according to Ecology vapor intrusion guidance (Ecology 2018). Vapor intrusion assessment follows a tiered approach, beginning with a preliminary assessment to identify whether the potential for vapor intrusion exists at the site, and, if it does, which buildings may be affected. The preliminary assessment using data collected during the RI will determine if additional assessment steps (Tier I and Tier II) are necessary. The scope of potential additional soil vapor intrusion assessment will be documented as an amendment to this RIWP.

6.7 SWMU-43: Stormwater Sewer System

Investigation of soil and groundwater is proposed for SWMU-43 with the following objectives:

- Evaluate if PCOCs are migrating from the stormwater system to the soil and groundwater, and from soil and groundwater into the stormwater system when the groundwater level is above the storm sewer lines via cracks or other failures in the stormwater sewer system. Investigation will mainly focus on structures for which data is available (Appendix J) so that RI results can be compared to stormwater data. The installation of monitoring wells or additional sampling will be proposed in a later phase of the RI, if necessary, and following evaluation of collected soil and groundwater data.
- Demonstrate site-wide groundwater and stormwater system interaction. Groundwater elevations measured at proposed sampling locations in SWMU-43 and other investigation areas will be compared to stormwater sewer system invert elevations. The relationship between the groundwater and invert elevations will be used to evaluate the direction of contaminant migration (i.e., from groundwater to stormwater or vice versa). Spatial representation of this relationship will inform if additional SWMU-43 sampling is necessary for the RI.

The soil and groundwater investigation for SWMU-43 will consist of collecting soil and groundwater grab samples from 15 soil borings in 13 different drainage areas. Locations are presented on Figure 30, and summarized by drainage area in the following table:

Drainage Area	Proposed Boring(s)	Nearby Structure(s) with Data
1	DA01-1	OWS1, 1.32M
2	DA02-1	OWS2, 2.18M
3	DA03-1	None
4	DA04-1	None
5	DA05-1	OWS5, 5.16M
9	DA09-1	OWS9, 9.66M
10	DA10-1	10.9M
11	DA11-1, DA11-2	11.31M
12	DA12-1, DA12-2	OWS12.1, 12.56M
13	DA13-1	OWS13, 13.43M

Drainage Area	Proposed Boring(s)	Nearby Structure(s) with Data
14	DA14-1	OWS14
15	DA15-1	OWS15
19	DA19-1	None

The 15 soil borings will be drilled using direct-push methods. Soil samples will be collected at three intervals (approximately 7–10 ft bgs, 10–13 ft bgs, and 13–16 ft bgs) in order to measure potential contaminant mass in soil surrounding and below the stormwater structures. A maximum of three soil samples are anticipated at each location. Samples will be analyzed for TPH-D/O, TPH-G, VOCs, PCBs, PAHs, and total metals, as described in Table 4. All PCB soil samples for SWMU-43 will be collected as split samples; LAI will submit one sample to the primary analytical laboratory for analysis of PCB Aroclors by EPA Method 8082A and will provide the second sample to Ecology to hold for potential analysis of PCB Congeners by EPA Method 1668C at a laboratory of its choice.

A single groundwater grab sample will be collected at each boring and analyzed for TPH-G, TPH-D/O, VOCs, PCBs, PAHs, total/dissolved metals, and total/dissolved mercury, per Table 4. The PCB groundwater sample for SWMU-43 will be collected as a split sample; LAI will submit one sample to the primary analytical laboratory for analysis of PCB Aroclors by EPA Method 8082A and will provide the second sample to Ecology to hold for potential analysis of PCB Aroclors by EPA Method 8082A at a laboratory of its choice.

As some of the stormwater structures and sampling locations are located in close proximity to the LDW, there is a potential for the locations to be within the surface water/groundwater transition zone. Ecology has concerns that groundwater sampled within this zone will be diluted by the surface water and not representative of localized contamination. The location of the transition zone has not been evaluated at the DC, so it will be evaluated during the RI. Field parameters (i.e., conductivity, pH, etc.) collected during groundwater sampling in SWMU-43 will be compared to available data at wells located in the center of the site to evaluate how far inland the transitional zone extends. Additional details of this sampling and evaluation are provided in the SAP (Appendix A).

6.8 Gate J-28/Museum of Flight

Additional investigation of groundwater is planned for the Museum of Flight property, pending approval from the museum. The investigation will further evaluate the current nature and extent of contamination on this parcel. Sampling locations are selected based on the area of known groundwater contamination near former well DC-MW-9, as GPR surveys, E-M surveys, Phase II ESA sampling and groundwater monitoring determined that this was the only remaining area of concern. Results will determine if further action is necessary.

A groundwater investigation will be performed in the current location of the Museum of Flight West Campus to address the following data gaps identified by Ecology:

- Groundwater sampling for TPH-G and TPH-D/O at three prior monitoring wells (DC-MW-7, DC-MW-8, and DC-MW-9) was discontinued in 2004 even though concentrations remained above applicable CULs at DC-MW-9. It was concluded that concentrations were not likely to decrease until the off-site source of TPH was identified and removed. These wells were not able to be located during recent reconnaissance of this area.

The objectives of additional investigation in this area are to:

- Evaluate the current concentrations of TPH-G and TPH-D near the former well DC-MW-9 in groundwater.
- Determine if PCOCs in groundwater are discharging to Slip 6.

The groundwater investigation for the Museum of Flight will involve collecting a single grab sample from two direct-push borings (RISB-15 and RISB-16; Figure 31). Boring RISB-15 will be located in the vicinity of former well DC-MW-9, where concentrations were above CULs when sampling ended in 2004 and the highest TPH-D concentration was measured in groundwater during the Phase II ESA. Boring RISB-16 will be located along the downgradient boundary of the Museum of Flight property and near the location of the former two, 500-gallon, USTs to determine if PCOCs are present in groundwater and potentially discharging to Slip 6. The final location of the new borings may be adjusted based on the locations of existing storm drains and surrounding utilities. Groundwater samples will be analyzed for TPH-D/O and TPH-G in accordance with Table 4.

6.9 Groundwater Seeps

An investigation of groundwater seeps along the shoreline of the LDW will be performed to determine if PCOCs in site groundwater are reaching the LDW via seeps.

The investigation associated with groundwater seeps from the DC into the LDW will involve reconnaissance and sampling at locations of groundwater seepage. Seven seeps were identified during a previous investigation, but only three of the identified seeps were sampled in June 2018 by Windward based on available data, accessibility issues, and the failure of several seeps to meet sampling requirements (e.g., accessibility, flow rate, conductivity). Reconnaissance of these seven previously identified locations (SP-24, SP-26, SP-27, SP-28, SP-33, SP-35, and SP-37) will also be performed as part of this investigation. Groundwater samples will be collected from other accessible seeps that also meet the sampling requirements stated in the SAP (Appendix A). The seep reconnaissance locations are presented on Figure 23.

The sampling and analysis plan for groundwater seeps is outlined in Table 4. Groundwater seep samples from all accessible seeps that meet sampling requirements along the DC facility boundary with the LDW will be analyzed for TPH-G, TPH-D/O, VOCs, PCBs, PAHs, total/dissolved metals, and total/dissolved mercury.

6.10 Bank Soil Erosion

During the seep sampling reconnaissance along the LDW, shoreline bank area on property owned by Boeing between Building 9-120 and Building 9-140 (Figures 3 and 23) and Slip 6 will be observed and documented for signs of soil erosion. If soil erosion is observed, soil samples will be collected at a frequency of one discrete sample per 20 ft of relatively continuous bank erosion observed. Bank erosion samples will be collected per the sampling requirements stated in the SAP (Appendix A). Discrete soil samples will be analyzed for TPH-G, TPH-D/O, VOCs, PCBs, PAHs, and total metals, as outlined in Table 4.

7.0 REPORTING

An RI report will be prepared in accordance with MTCA (WAC 173-340-350) to document the investigation activities conducted at the site and the nature and extent of contamination, and provide the data required to support the preparation of an FS for potential cleanup actions at the site. The RI report will document the findings of the activities outlined in this work plan and the data collected using text, tables, figures, geologic/hydrogeologic cross sections, and groundwater contour maps, as appropriate. The report will include an assessment of the quality of the analytical data based on a quality assurance/quality control review, and present and discuss the data relative to the site screening levels. The report will also include an exclusion evaluation and a simplified TEE, if the results of the RI suggest a simplified TEE is necessary.

The RI report will incorporate, as appropriate, the findings of the RI field investigations with existing data from previous investigations and remedial actions at the site to document and evaluate the CSM, including: the site stratigraphy, hydrogeology, seasonal groundwater occurrence and flow, potential receptors and pathways, and potential contaminant occurrence and migration.

Per the Agreed Order (No. DE 16275), project progress reports will continue to be submitted to Ecology monthly, or as otherwise agreed.

8.0 SCHEDULE

An anticipated schedule for the RI is summarized below. This schedule assumes that all necessary approvals of this final work plan will be in place by February 28, 2021. Drilling tasks are dependent on driller availability.

Tasks	Date Range or Completion Time
Redevelopment of existing monitoring wells, utility and UST locating, and collection and laboratory analysis of groundwater samples from existing wells	March 2021
Collection and laboratory analysis of soil and groundwater grab samples from new soil borings in select investigation areas. Reconnaissance, and collection and laboratory analysis of groundwater samples from groundwater seeps along the LDW.	March–May 2021
Completion of all RI field work, including any additional phase(s) of investigation that are required after the investigation presented in this work plan	12 months after Ecology approval of this work plan
Submittal of Agency Review Draft RI report	90 days after completion of all RI field work

Variations from this schedule may be necessary based on unanticipated findings, site access constraints, weather delays, and potential revisions to the existing scope and budget authorization, if needed. If additional RI activities are needed to meet the objectives of the RI work plan, the scope, schedule, and submittal requirements for this additional work will be developed and discussed with Ecology. Substantial changes/additions will be submitted as RI work plan addenda to Ecology for review and approval.

9.0 USE OF THIS WORK PLAN

This work plan has been prepared for the use of The Boeing Company and its designated representatives for specific application to the remedial investigation at the Boeing Developmental Center facility in Tukwila, Washington. No other party, except applicable regulatory agencies, is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. Further, the reuse of information and recommendations provided herein for extensions of this project or for any other project, without review and authorization by LAI, shall be at the user's sole risk. LAI 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.

10.0 REFERENCES

Boeing. 2020. Stormwater Pollution Prevention Plan, Boeing Developmental Center, Washington Department of Ecology, Permit # WAR-000146. The Boeing Company. January.

Boeing. 2009. Frontiers Magazine, Volume VIII, Issue IV. 50 years at the leading edge, by Mike Lombardi. The Boeing Company. August.

Boeing. 2003. Letter: Completion of Groundwater Monitoring at AOC-03/04, Boeing Developmental Center, Tukwila, Washington. From James Bet, SSG Environmental Remediation, The Boeing Company, to Byung Maeng, Washington State Department of Ecology, Northwest Regional Office. May 7.

Bortleson, G.C., M. Chrzastowski, and A. Helgerson. 1980. Historical Changes of Shoreline and Wetland at Eleven Major Deltas in the Puget Sound Region, Washington. Hydrogeologic Investigations Atlas HA-617. US Geological Survey.

Dawson, W.A., and I.J. Tilley. 1972. Measurement of Salt-Wedge Excursion Distance in the Duwamish River Estuary, Seattle, Washington, by Means of the Dissolved-Oxygen Gradient. Geological Survey Water-Supply Paper 1873-D. US Geological Survey.

Dragovich, J.D., P.T. Pringle, and T.W. Walsh. 1994. Extent and Geometry of the Mid-Holocene Osceola Mudflow in the Puget Lowland – Implication of Holocene Sedimentation and Paleogeography. Washington Geology. 22(3): 3-26.

Ecology. 2020. "Cleanup Levels and Risk Calculations (CLARC)." Washington State Department of Ecology. https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx.

Ecology. 2019a. Agreed Order No. DE 16275, in the Matter of Remedial Action by The Boeing Company, Developmental Center, 9725 East Marginal Way South, Tukwila, Washington. Washington State Department of Ecology. Effective date: July 23, 2019.

Ecology. 2019b. Spreadsheet: Lower Duwamish Waterway Preliminary Cleanup Level Workbook. Washington State Department of Ecology. April 5.

Ecology. 2018. Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action. Publication No. 09-09-047. Washington State Department of Ecology, Toxics Cleanup Program. April. Revised.

Ecology. 2014. Letter: Site Hazard Assessment – Museum of Flight Property. From Donna Musa, Site Hazard Assessments, Toxics Cleanup Program, Washington State Department of Ecology, to Museum of Flight Foundation. April 14.

Ecology. 2002. Letter: Completion of Groundwater Monitoring at AOC-01/02, Boeing Developmental Center (WAD 093 639 946). From Byung Maeng, PE, Environmental Engineer, Hazardous Waste and Toxics Reduction Program, Washington State Department of Ecology, to Mr. James Bet, SSG Environmental Remediation, The Boeing Company. November 25.

Ecology. 1997. Letter: Ecology's Acceptance of Certification for Final Facility Clean Closure of the Boeing Developmental Center (WAD 093639946). From Julie Sellick, Supervisor, Hazardous Waste and Toxics Reduction Section, Washington State Department of Ecology, to Mr. Andro B. Wipplinger, Supervisor, Environmental Management, Boeing Defense and Space Group. September 3.

Floyd|Snider and Aspect. 2014. Duwamish Industrial Area Hydrogeology Pathways Project: Duwamish Basin Groundwater Pathways Conceptual Model Report. Floyd|Snider and Aspect Consulting. January 27. Draft for Ecology internal review.

Galaster, R.W., and W.T. Laprade. 1991. Geology of Seattle, Washington. Bulletin of the Association of Engineering Geologists. 28(3): 235-302.

GeoEngineers. 2001. Report, Phase II Environmental Site Assessment, 9725 East Marginal Way South, Seattle, Washington. GeoEngineers, Inc. February 8.

Geosyntec. 2018. Engineering Report: Advanced Stormwater Treatment, Boeing Developmental Center, Tukwila, WA. Geosyntec Consultants, Inc. September 28.

LAI. 2019a. Interim Action Work Plan, Developmental Center, Tukwila, Washington. Landau Associates, Inc. March 22.

LAI. 2019b. Letter: May 2019 Semiannual Groundwater Monitoring Report, Boeing Developmental Center, Tukwila, Washington. From Jenny Green, EIT, Senior Staff EIT, and Kenneth Reid, LEG, Senior Geologist, Landau Associates, Inc., to Byung Maeng, Washington State Department of Ecology, Northwest Regional Office. July 19.

LAI. 2017. Engineering Report, Level Three Stormwater Corrective Action, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. June 16.

LAI. 2015a. Technical Memorandum: Additional Reduction in SWMU-20 Groundwater Monitoring Program, Boeing Developmental Center, 9725 East Marginal Way South, Tukwila, Washington. From Clint Jacob, PE, LG, Landau Associates, Inc., to James Bet, The Boeing Company. March 18.

LAI. 2015b. Technical Memorandum: SWMU-20 Work Plan Addendum, Fifth Electron Donor Injection, Boeing Developmental Center, Tukwila, Washington. From Brandan Duncan, PE and Clint Jacob, PE, Landau Associates, Inc. to Jim Bet, The Boeing Company. September 10.

LAI. 2014. Technical Memorandum: Groundwater Treatment System Decommissioning, SWMU-20—Boeing Developmental Center, Tukwila, Washington. From Clint Jacob, PE, LG, Landau Associates, Inc., to Jim Bet, The Boeing Company. May 16.

LAI. 2013. Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. May 7.

LAI. 2011. SWMU-17 Remedial Action Work Plan, Enhanced Anaerobic Bioremediation, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. June 3.

LAI. 2010. Technical Memorandum: Reduction – SWMU-20 Groundwater Monitoring Program (Revised to Address Ecology Conditional Approval), Boeing Developmental Center, 9725 East Marginal Way South, Tukwila, Washington. From Clint Jacob, PE, LG, Landau Associates, Inc., to James Bet, The Boeing Company. April 1.

LAI. 2006a. Technical Memorandum: Evidence of Nitrate Reducing Conditions, AOC-05, Boeing Developmental Center, Tukwila, Washington. From Clint Jacob, PE, and Benni Jonsson, Landau Associates, Inc., to Jim Bet, The Boeing Company. June 19.

LAI. 2006b. Technical Memorandum: Results of Indoor Air Sampling, SWMU-20 Building 9-90, Boeing Developmental Center, Tukwila, Washington. From Clint Jacob, PE, and Chip Halbert, PE, Landau Associates, Inc., to Jim Bet, The Boeing Company. March 14.

LAI. 2005a. Technical Memorandum: SWMU-20 Groundwater and Indoor Air Modeling and Recommended Actions, Boeing Developmental Center, Tukwila, Washington. From Chip Halbert, PE and Clint Jacob, PE, Landau Associates, Inc., to Jim Bet, The Boeing Company. February 23.

LAI. 2005b. Technical Memorandum: Work Plan for Indoor Air Sampling, SWMU-20 Building 9-90, Boeing Developmental Center, Tukwila, Washington. From Clint Jacob, PE and Chip Halbert, PE, Landau Associates, Inc., to Jim Bet, The Boeing Company. December 9.

LAI. 2004a. Construction Completion Report, Stormwater Treatment Vault Installation, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. February 26.

LAI. 2004b. Evaluation Report, SWMU-17, SWMU-20, and AOC-05, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. March 10.

LAI. 2004c. Report: 2004 Annual Groundwater Monitoring, Gate J-28/Museum of Flight, Tukwila, Washington. Landau Associates, Inc. July 23.

LAI. 2003. Report, 2003 Annual Groundwater Monitoring Gate J-28/Museum of Flight, Tukwila, Washington. Landau Associates, Inc. July 24.

LAI. 2002a. Report, 2002 Annual Groundwater Monitoring, Gate J-28/Museum of Flight, Tukwila, Washington. Landau Associates, Inc. May 24.

LAI. 2002b. Summary Report, Corrective Action, Boeing Developmental Center. Landau Associates, Inc. February 27.

LAI. 2001. Report, Groundwater Quality Investigation, Gate J-28, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. May 31.

LAI. 2000. Report: Investigation for Underground Storage Tanks, Terminal 128, Seattle, Washington. Landau Associates, Inc. July 24.

LAI. 1992. Phase III Report, Soil and Groundwater Characterization, Building 9-101, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. October 2.

LAI. 1990a. Final Report, Summary of Soil and Ground Water Quality, Building 9-101 Structural Improvements, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. November 12.

LAI. 1990b. Final Report, Underground Storage Tank Removal, Former Tanks DC-13 and DC-14, Building 9-52, Boeing Developmental Center, Tukwila, Washington. Landau Associates, Inc. December 5.

LAI. 1989. Remediation Documentation Report, Dallas-Mavis Forwarding Site, Boring Terminal 128 Facility, King County, Washington. Landau Associates, Inc. December 18.

LAI. 1987a. Draft Report: Petroleum Contamination Investigation Near Gate J-28 Entrance, The Boeing Company, King County, Washington. Landau Associates, Inc. March 31.

LAI. 1987b. Report on Soil and Groundwater Contamination Tank DC-05, Boeing Developmental Center Facility, King County, Washington. Landau Associates, Inc. June 4.

LAI. 1986a. Final Report, Terminal 128 Underground Tanks Survey, Boeing Military Aircraft Company, Seattle, Washington. Landau Associates, Inc. June 11.

LAI. 1986b. Terminal 128 Site Evaluation. Landau Associates, Inc. April 4.

PPC. 2002. Draft Summary of Drain Line Cleanout Work, South Storm Drain from Developmental Center 9-101 Building. Project Performance Corporation. September 10.

PPC. 2001. Data Summary of PCB Sampling from Accumulated Solids and Construction Materials in and around Storm Sewer Lines at the Developmental Center. Project Performance Corporation. July 12.

SAIC. 2010. Lower Duwamish Waterway, RM 4.3 to 4.9 East (Boeing Developmental Center), Summary of Existing Information and Identification of Data Gaps. Science Applications International Corporation. June.

SAIC. 1994. RCRA Facility Assessment Report for Boeing Developmental Center, Tukwila, Washington, EPA ID No. WAD 09363 9946 and Boeing Military Flight Center, Seattle, Washington, EPA ID No. WAD 98847 5943. Science Applications International Corporation. September.

SAIC and NewFields. 2011. Stormwater Lateral Loading Study, Lower Duwamish Waterway, WA, Data Report. Science Applications International Corporation and NewFields. December.

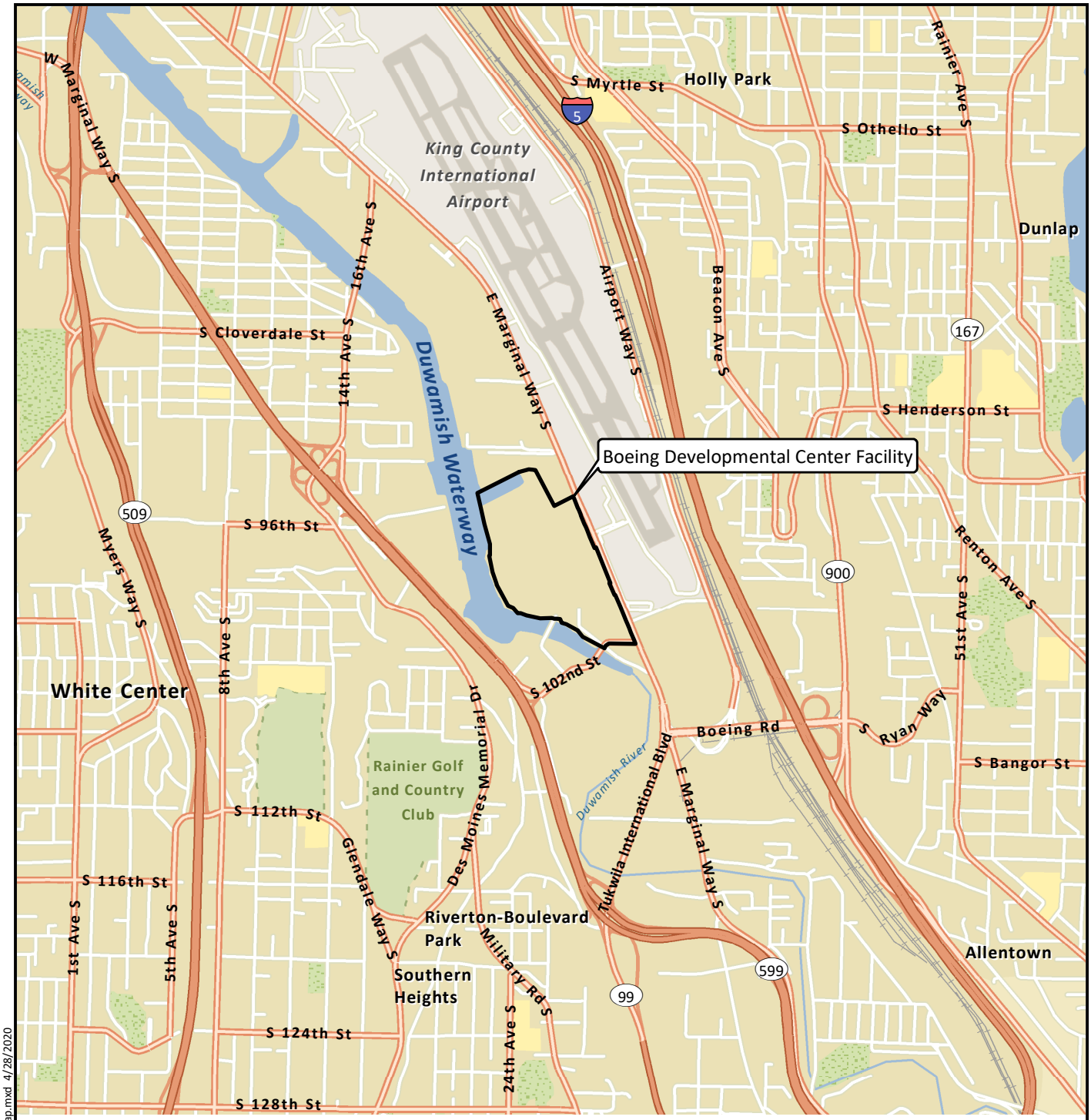
Tetra Tech. 1996. Groundwater Extraction and Treatment System Assessment, Boeing Developmental Center, DC 9-101 Building. August.

USGS. 1974. Numerical Model of Materials Transport in Salt-Wedge Estuaries. Open-file report. US Geological Survey.

Windward. 2018. Lower Duwamish Waterway Baseline Seep Data Report, Final. Windward Environmental LLC for the Lower Duwamish Waterway Group. December 7.

Windward. 2004. Data Report: Survey and Sampling of Lower Duwamish Waterway Seeps, Final. Windward Environmental LLC for the Lower Duwamish Waterway Group. November 18.

Yount, J.C., G. Dembroff, and G. Barats. 1985. Map Showing Depth to Bedrock in the Seattle Quadrangle, Washington. Miscellaneous Field Studies Map MF-1692. US Geological Survey.



Data Source: Esri 2012

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Boeing Developmental Center Tukwila, Washington	**Vicinity Map**	Figure 1

G:\Projects\025\093\118\112\F02 FacilityMap.mxd 8/2/2019

Legend

Facility Boundary

0 300 600

Scale in Feet

Data Sources: Boeing; Esri World Imagery.

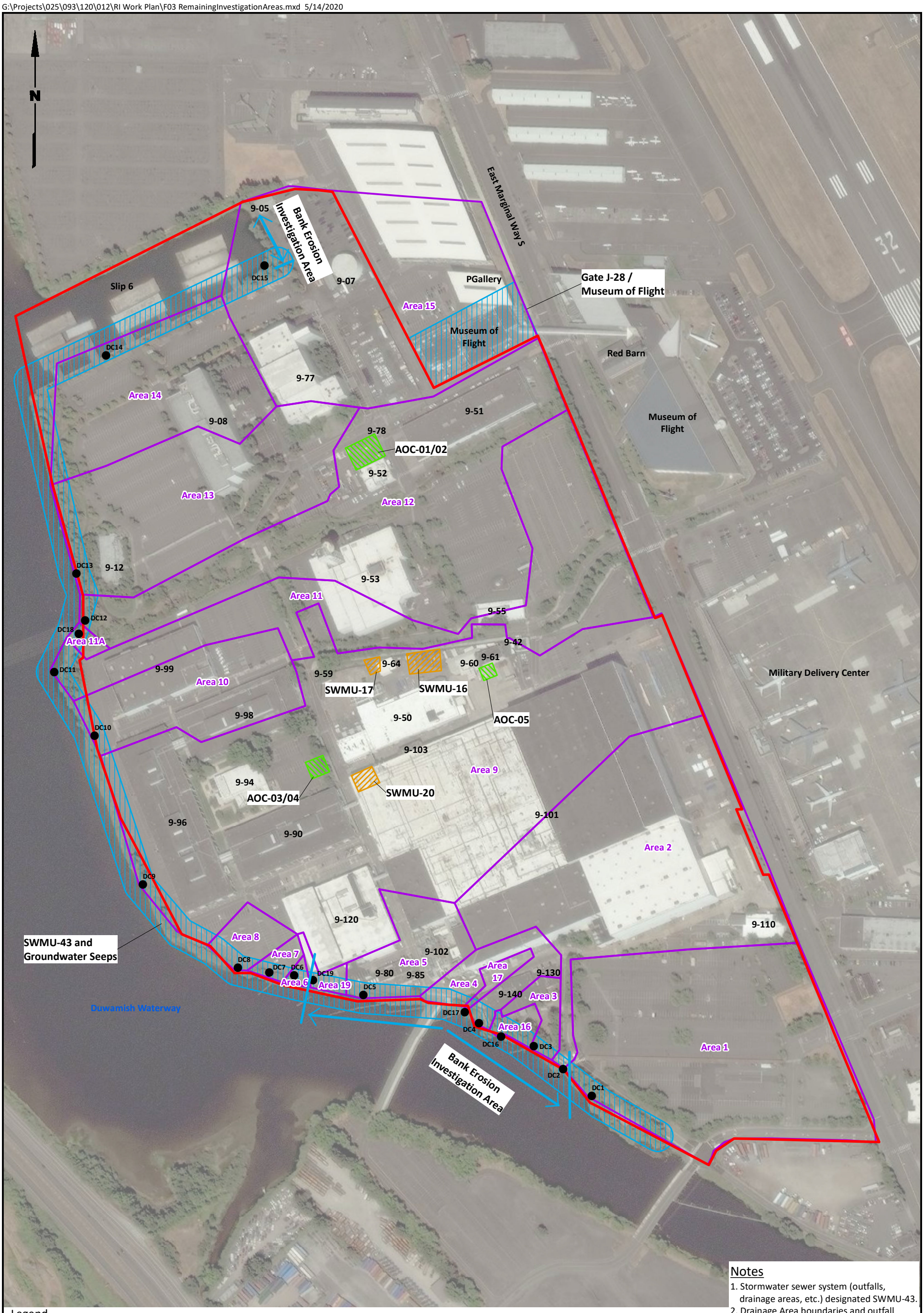
Note

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

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Facility Map**	Figure 2

G:\Projects\025\093\120\012\RI Work Plan\F03 RemainingInvestigationAreas.mxd 5/14/2020



Legend

- Outfall
- AOCs
- SWMUs
- Other Investigation Areas
- Drainage Areas
- Facility Boundary

Notes

1. Stormwater sewer system (outfalls, drainage areas, etc.) designated SWMU-43.
2. Drainage Area boundaries and outfall locations are subject to change due to planned modifications required for stormwater treatment.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

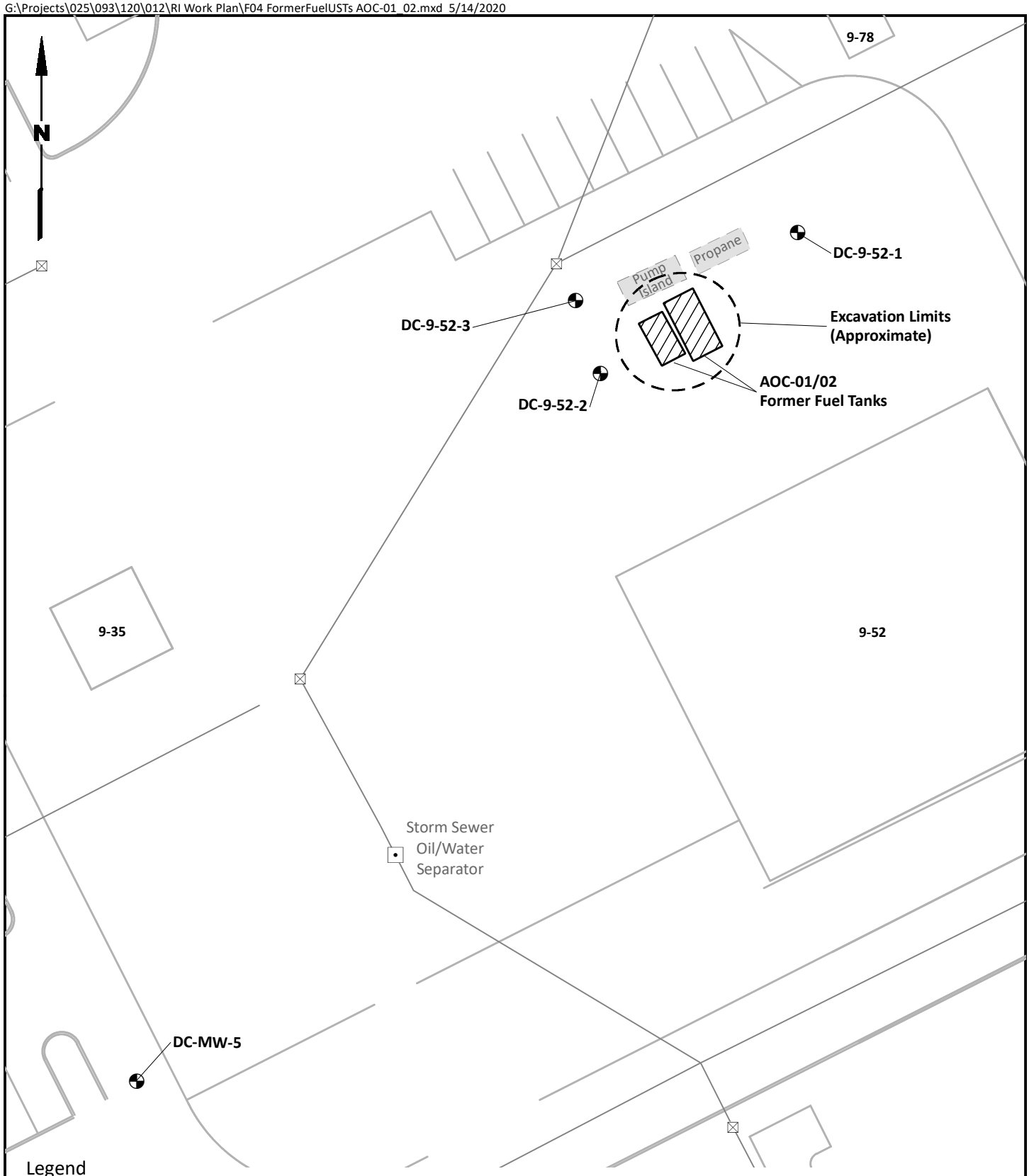
Data Sources: Boeing; Esri World Imagery.

Boeing Developmental Center
Tukwila, Washington

Remaining Investigation Areas

Figure 3

G:\Projects\025\093\120\012\RI Work Plan\F04 FormerFuelUSTs AOC-01_02.mxd 5/14/2020

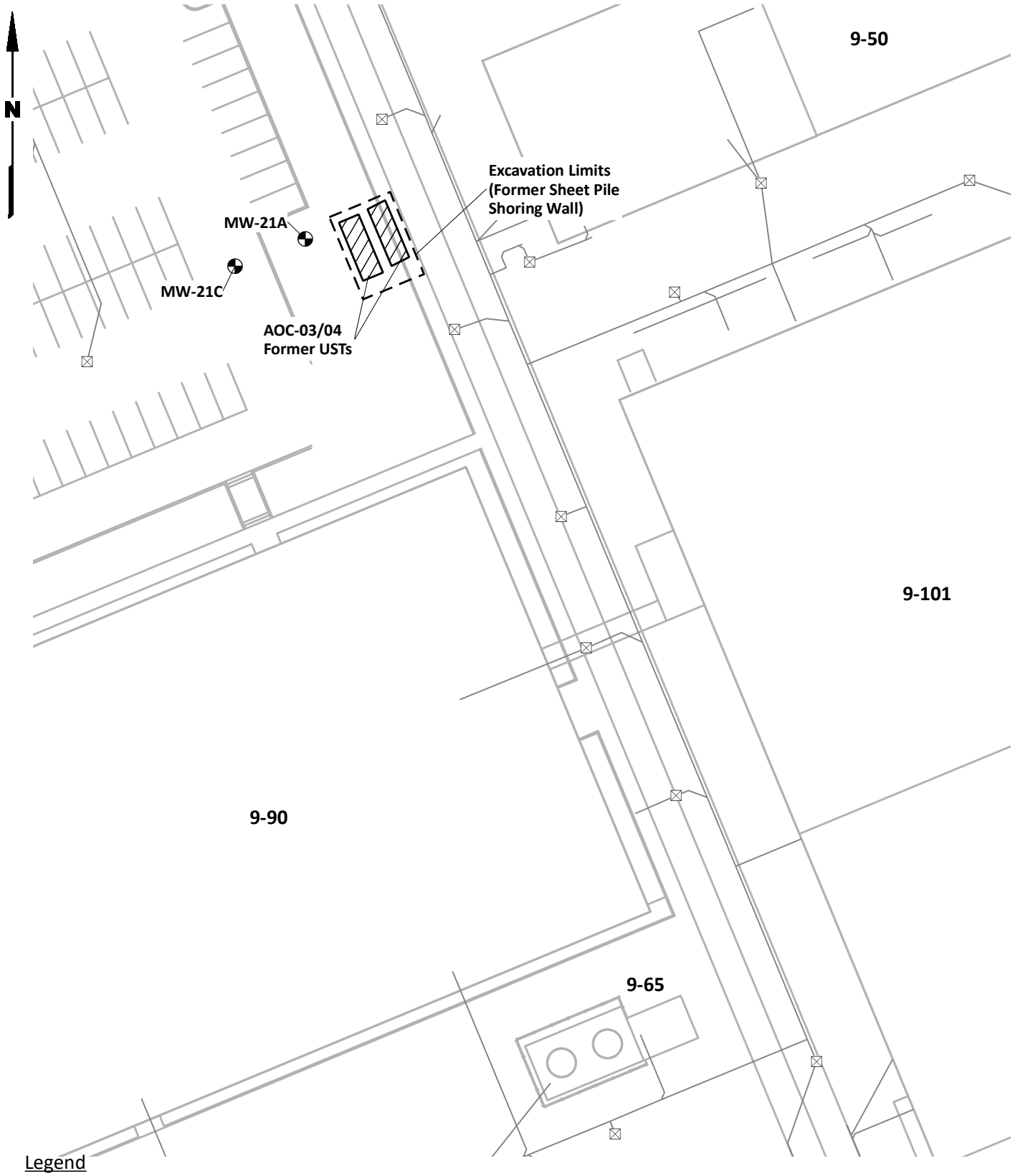


Data Sources: Boeing

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**AOC-01/02: Former Fuel USTs**	Figure 4

G:\Projects\025\093\120\012\RI Work Plan\F05 FormerNo5OilUSTs_AOC-03_04.mxd 5/14/2020



Legend

MW-21A Monitoring Well

Excavation Limits

0 50 100

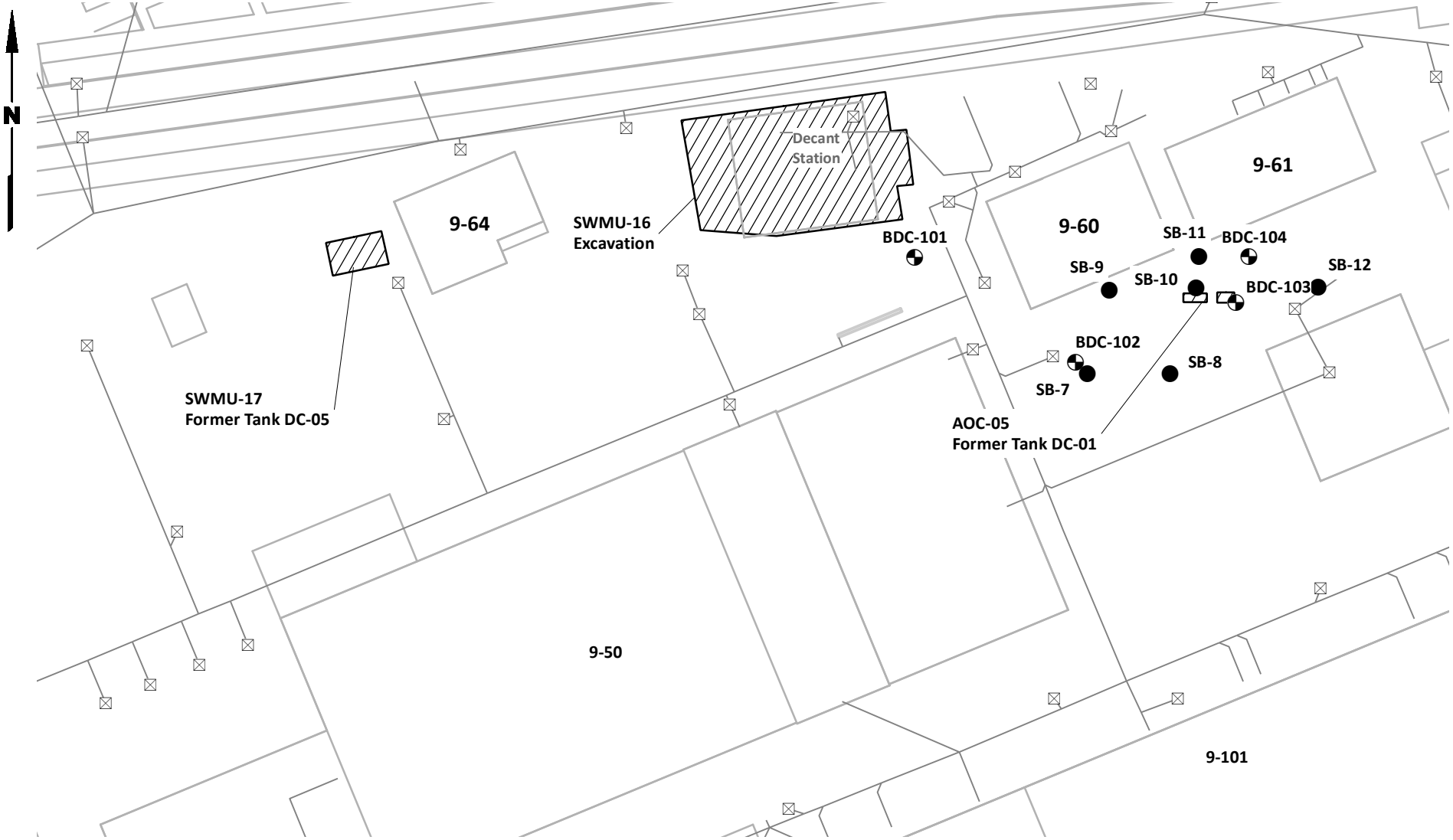
Scale in Feet

Data Source: Boeing

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**AOC-03/04: Former No. 5 Oil USTs**	Figure 5

G:\Projects\025\093\118\112\RI Work Plan\F06 FormerUnleadedGasolineUST_AOC-05.mxd 10/17/2019

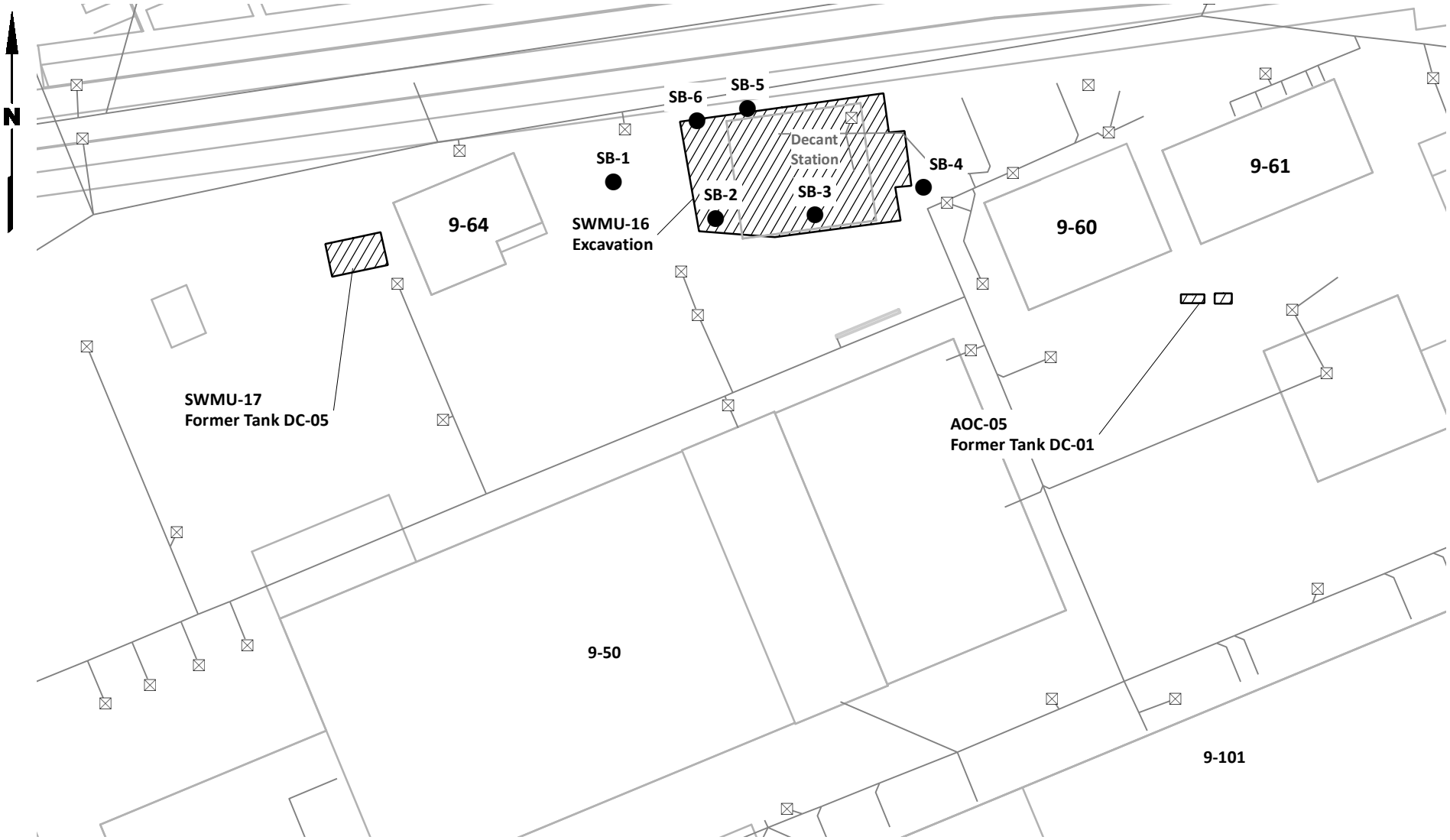


Data Source: Boeing

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**AOC-05: Former Unleaded Gasoline UST**	Figure 6

G:\Projects\025\093\118\112\RI Work Plan\F07 FormerRegulatedMaterialsStorageArea_SWMU-16.mxd 10/17/2019



Legend

SB-1 ● Boring Location

0 60 120

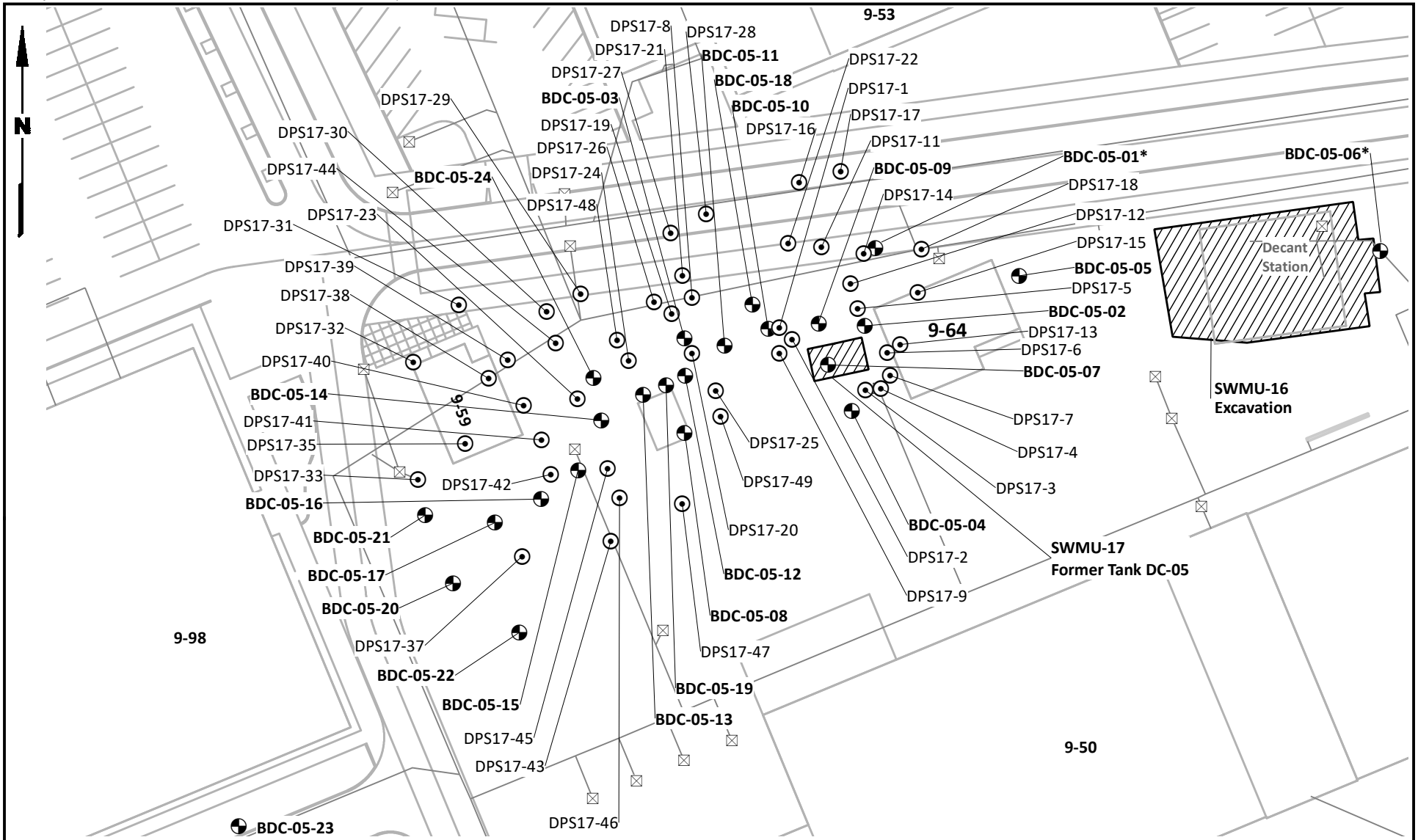
Scale in Feet

Data Source: Boeing

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**SWMU-16: Former Regulated Materials Storage Area**	Figure 7

G:\Projects\025\093\120\012\RI Work Plan\F08 SWMU17FormerSumpandUST.mxd 5/14/2020



Legend

BDC-05-05 Monitoring Well

DPS17-72 Direct-Push Boring

* Abandoned Well

Notes

1. BDC-05-01 abandoned January 1995 during Storm Sewer Relocation.
2. BDC-05-06 abandoned ~June 1996 prior to SWMU-16 Soil Excavation.

0 60 120

Scale in Feet

Data Source: Boeing

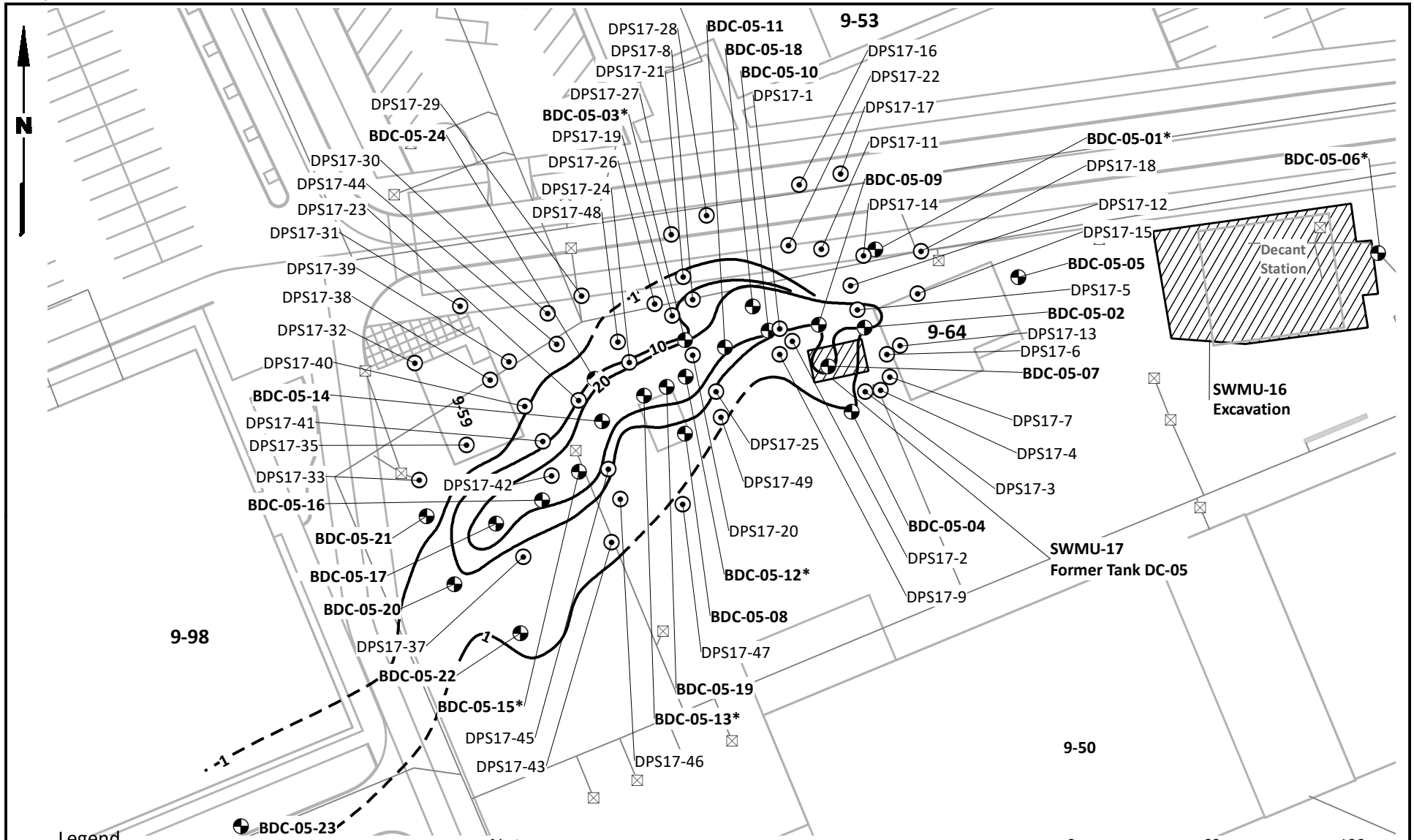
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-17: Former Sump and UST

Figure 8

G:\Projects\025\093\120\012\RI Work Plan\F09 SWMU17PCETCEGWPlumes.mxd 5/15/2020



Legend

BDC-05-05 Monitoring Well

DPS17-72 Direct-Push Boring

Baseline Concentration Contour for PCE and/or TCE (µg/L)

Inferred Baseline Concentration Contour for PCE and/or TCE (µg/L)

* Abandoned Well

Notes

1. BDC-05-01 abandoned January 1995 during Storm Sewer Relocation.
2. BDC-05-06 abandoned ~June 1996 prior to SWMU-16 Soil Excavation.

0 60 120

Scale in Feet

Data Source: Boeing

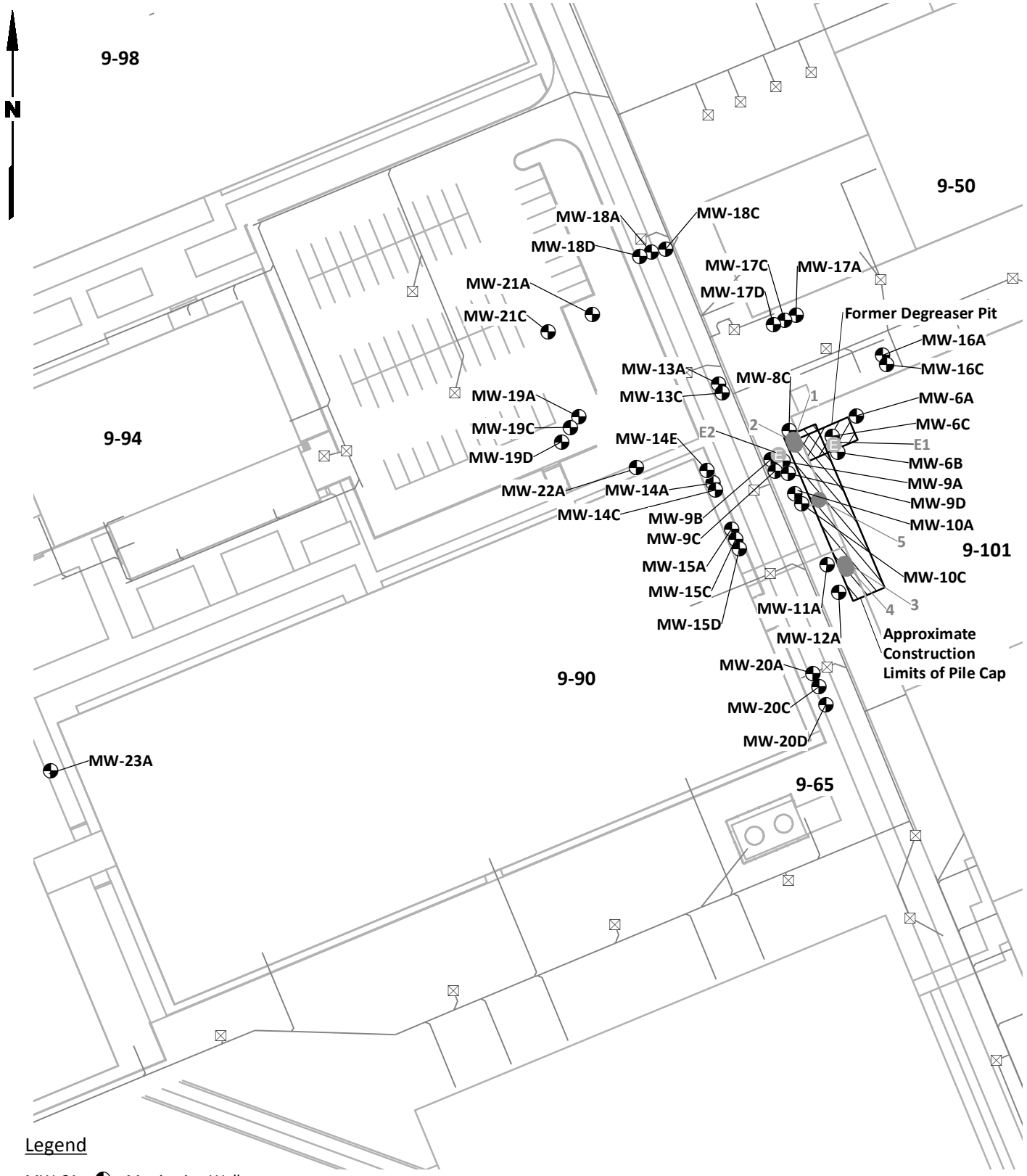
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-17: PCE/TCE Baseline Groundwater Plumes

Figure 9

G:\Projects\025\093\120\012\RI Work Plan\F10 SWMU20FormerDegreaserPit Rev1.mxd 5/6/2020



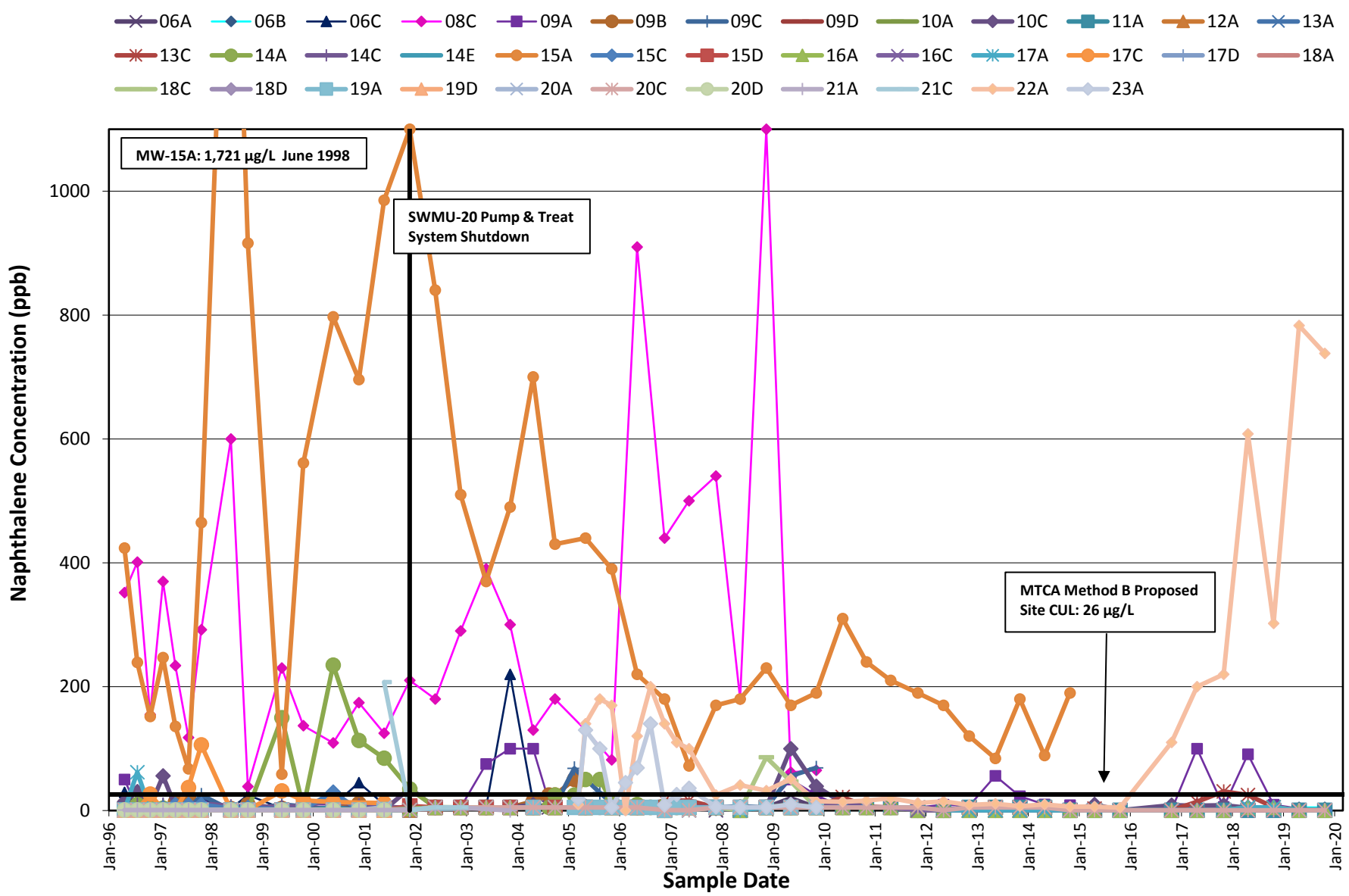
Data Source: Boeing

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-20:
Former Degreaser Pit

Figure
10



LANDAU ASSOCIATES

Boeing Developmental Center
Remedial Investigation
Tukwila, Washington

SWMU-20: Naphthalene Concentrations Over Time

Figure
11

G:\Projects\025\093\120\012\RI Work Plan\F12 SWSewerSystem.mxd 4/28/2020

Legend

- Catch Basin
- Manhole
- Oil/Water Separator
- Outfall
- Outfall (Plugged)
- Roof Downspout Filter Box
- Catch Basin with a Clean Way Insert Filter Structure with Filter Element Containing MetalZorb™
- Bulk MetalZorb™ Media
- Mesh Bag Filter with MetalZorb™
- Drainage Trench
- Storm Drain Line
- Drainage Areas

Notes

1. Locations of storm drain features are approximate.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 300 600

Scale in Feet

LANDAU ASSOCIATES

Data Sources: Boeing; Esri World Imagery.

Boeing Developmental Center
Tukwila, Washington

SWMU-43: Stormwater Sewer System

Figure 12

Legend

DC-MW-7	Former Monitoring Well
B-1	Former Soil Boring
	Possible Location of UST Based on GPR
	Confirmed Location of UST
	Possible Location of Spill

Note

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

0 150 300

Scale in Feet

Source: GeoEngineers, 1999

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Gate J-28/Museum of Flight**	Figure 13

G:\Projects\025\093\120\012\RI Work Plan\F14 SeepLocation.mxd 4/28/2020

Legend

- Known Seep Location
- Outfall
- Drainage Areas
- Facility Boundary

0 300 600

Scale in Feet

Notes

1. Stormwater sewer system (outfalls, drainage areas, etc.) designated SWMU-43.
2. Drainage Area boundaries and outfall locations are subject to change due to planned modifications required for stormwater treatment.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

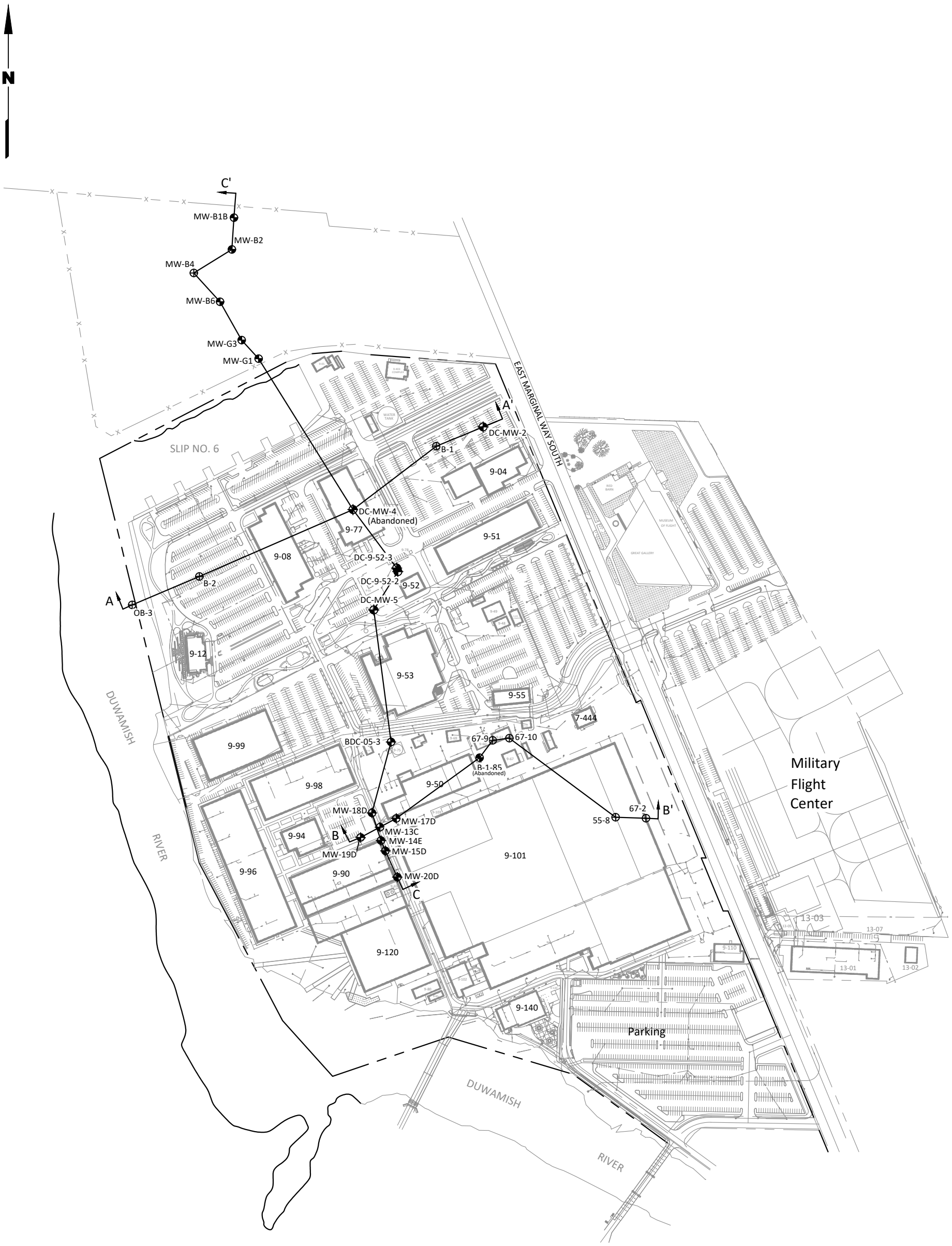
LANDAU ASSOCIATES

Data Sources: Boeing; Esri World Imagery.

Boeing Developmental Center
Tukwila, Washington

Known Groundwater Seep Locations

Figure 14



Legend

- Monitoring Well Location
- Soil Boring Location
- A A' Cross Section Location

Note

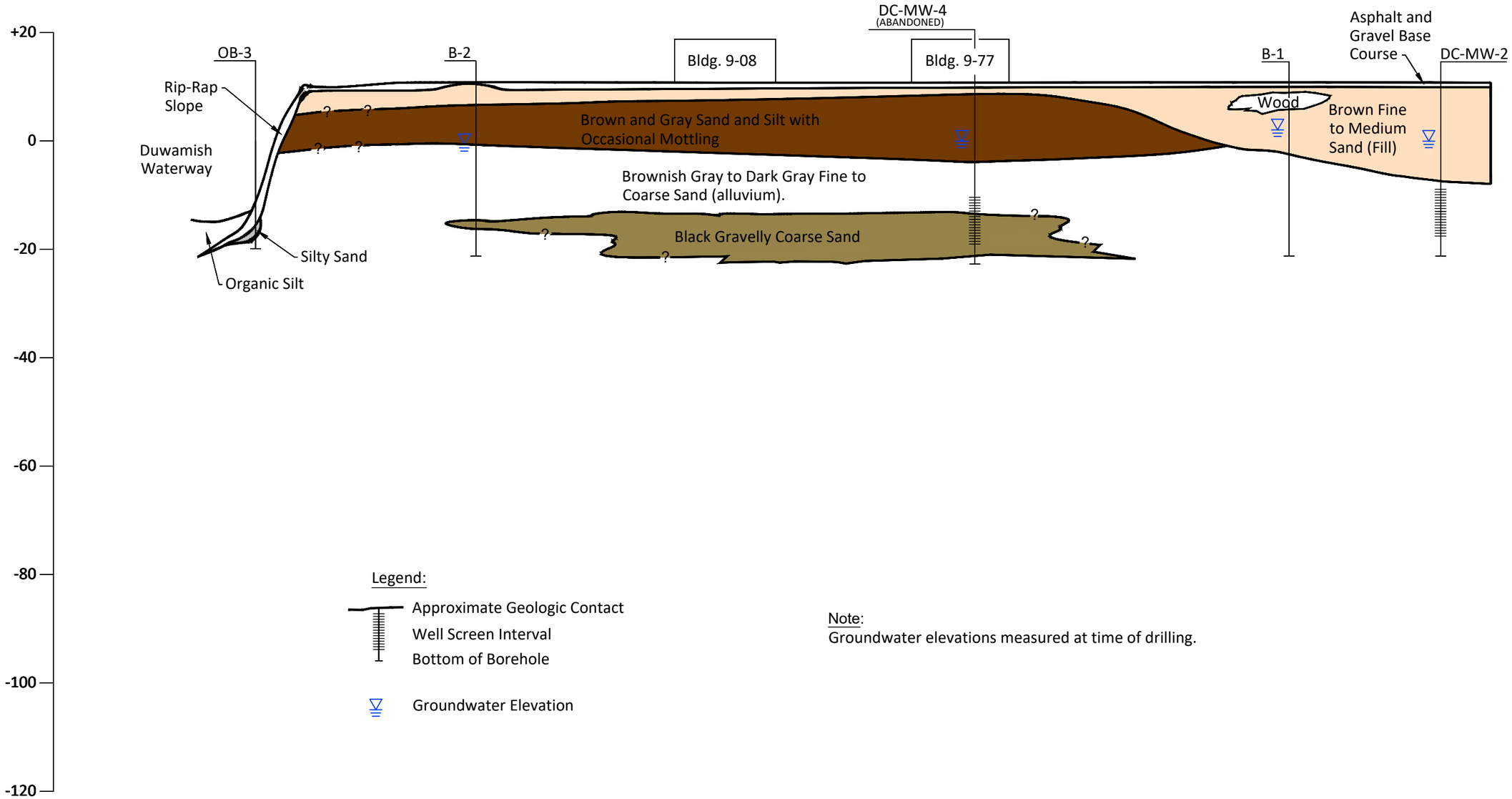
1. This base map shows existing conditions at the time of soil boring and monitoring well drilling for the creation of the cross-sections in this work plan. New cross-sections developed during the Remedial Investigation (RI) will be presented on a current base map, showing existing site conditions at the time of drilling.

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Cross-Section Locations**	Figure 15

A
West

A'
East



Legend:

- Approximate Geologic Contact
- Well Screen Interval
- Bottom of Borehole
- Groundwater Elevation

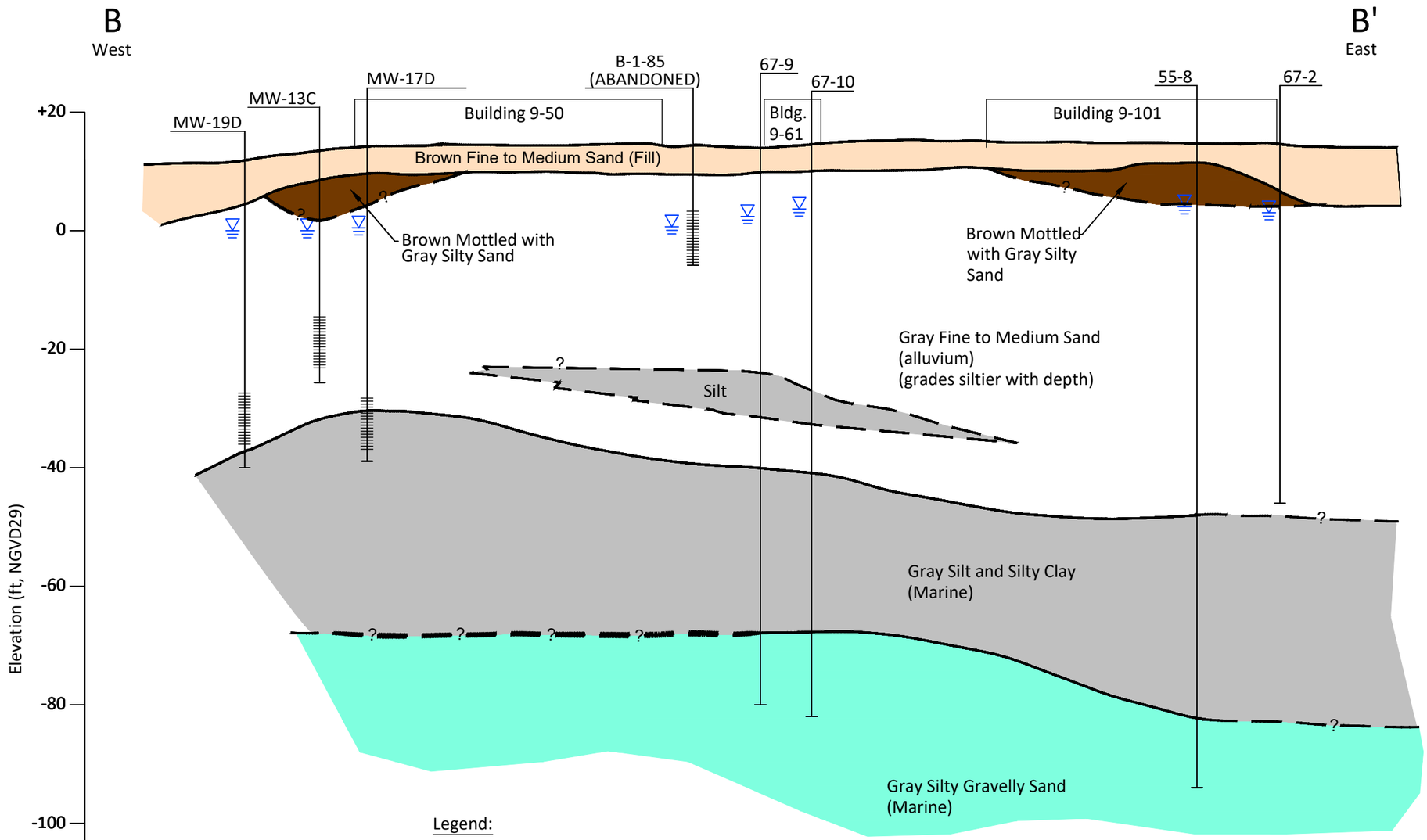
Note:
Groundwater elevations measured at time of drilling.

0 150 300
Horiz. Scale: 1"=150'
Vert. Scale: 1"=20'

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Cross-Section A-A'**	Figure 16

Landau Associates | G:\Projects\025\093\118\112\RI Work Plan\F16-F17-F18a-F18b Cross-SectionsABC.dwg | 10/18/2019 10:45 AM | JVALLUZZI



Legend:

- Approximate Geologic Contact
- Well Screen Interval
- Bottom of Borehole
- Approximate Groundwater Elevation

Note:
Groundwater elevations at wells MW-13C, MW-17D, and MW-19D measured in December 2000. Groundwater elevations at all other locations measured at time of drilling.

0 150 300

Horiz. Scale: 1"=150'
Vert. Scale: 1"=20'

Boeing Developmental Center Tukwila, Washington	**Cross-Section B-B'**	Figure 17

LANDAU ASSOCIATES

Landau Associates | G:\Projects\025\093\118\112\RI Work Plan\F16-F17-F18a-F18b Cross-SectionsABC.dwg | 10/18/2019 10:45 AM | JVALLUZZI

C

South

MATCHLINE

MW-14E

MW-15D

MW-18D

MW-20D

BDC-05-3

9-53 BLDG

DC-MW-5

DC-9-52-2

DC-9-52-3

+20

0

-20

-40

-60

-80

-100

-120

Elevation (ft, NGVD29)

Asphalt and Gravel Base Course

Brown Fine to Medium Sand (Fill)

Brown and Gray Sand and Silt with Occasional Mottling

Black Gravelly Coarse Sand

Silt

Gray Fine to Medium Sand (natural alluvium) (grades siltier with depth)

?

Dark Gray Silt and Silty Clay (Marine)

Dark Gray Silt and Silty Clay

Gray Silty Sandy Gravel (Marine)

MATCHLINE

Legend:

Approximate Geologic Contact

Well Screen Interval

Bottom of Borehole

Groundwater Elevation

Note:
Groundwater elevations measured in December 2000, except at wells MW-4, MW-5 and wells north of Slip No. 6, which were measured at time of drilling.

0 150 300

Horiz. Scale: 1"=150'
Vert. Scale: 1"=20'

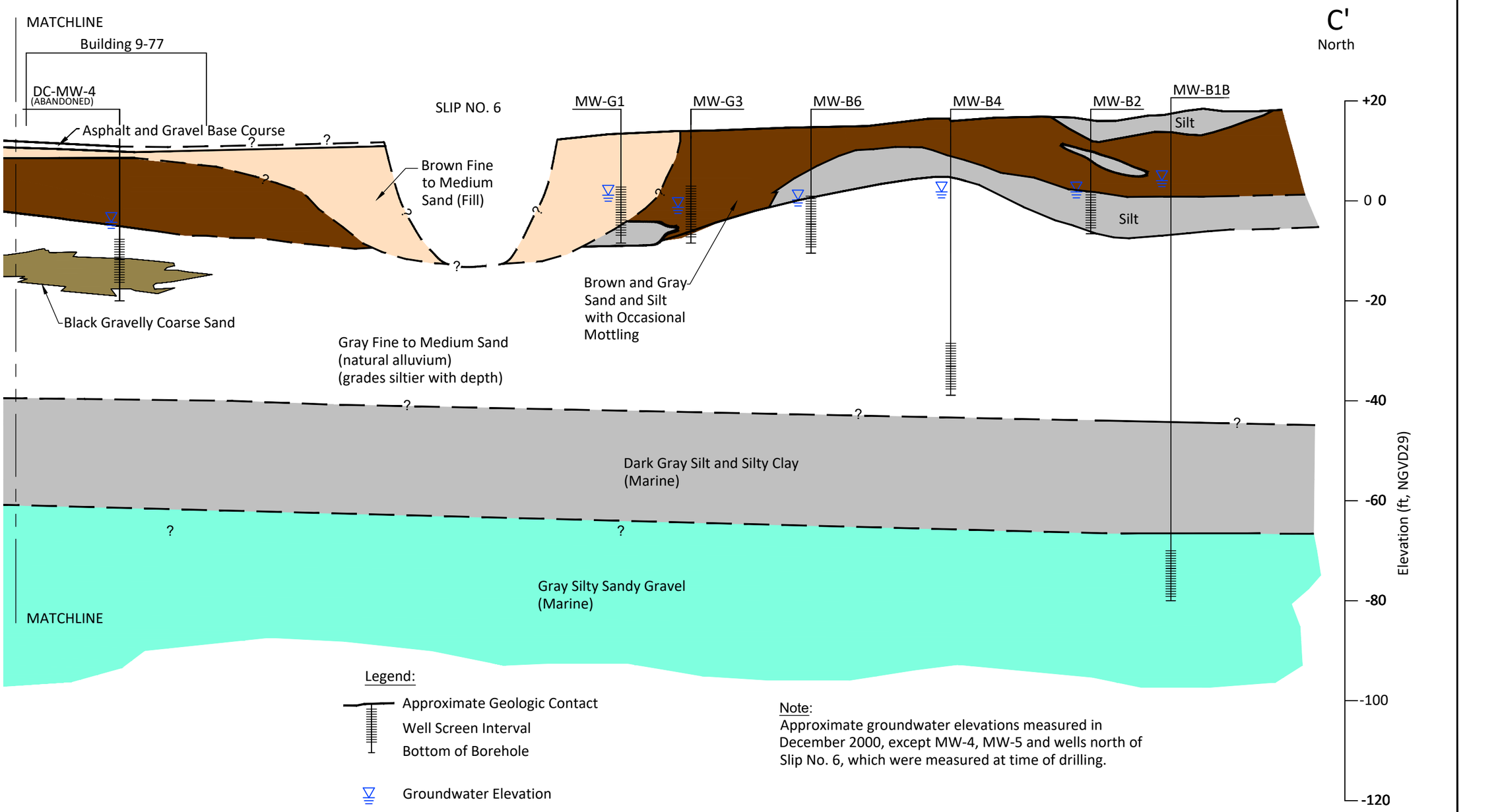
Boeing Developmental Center
Tukwila, Washington

Cross-Section C-C'
(South End)

Figure
18a

LANDAU ASSOCIATES

Landau Associates | G:\Projects\025\093\118\112\RI Work Plan\F16-F17-F18a-F18b Cross-SectionsABC.dwg | 10/18/2019 10:46 AM | JVALLUZZI



Boeing Developmental Center
Tukwila, Washington

Cross-Section C-C'
(North End)

Figure
18b

LANDAU ASSOCIATES

Landau Associates | G:\Projects\025\093\118\112\RI Work Plan\F16-F17-F18a-F18b Cross-SectionsABC.dwg | 10/18/2019 10:46 AM | JVALLUZZI

West

Groundwater Discharge Zone

Horizontal Groundwater Flow Zone

Groundwater Recharge Zone

East

I-5

Lower Duwamish Waterway

Boeing DC

Museum of Flight

King County Airport

Vashon Glacial Drift Overlaying Teritary Sandstone

Ground Surface

East Marginal Way South

Airport Way/BNSF Railroad

MHHW

MSL

MLLW

Fill

Fresh Water River Discharge

Shallow Aquifer
(Duwamish Alluvium)

0' MLLW

Salt Water Wedge from Elliot Bay

Silt

Silt

Silt

?

?

Aquitard
(Marine Silt and Clay)

Deep Aquifer
(Marine Sand)

Legend

- Groundwater flow direction
- Groundwater flow in the Deep Aquifer is towards the north(Elliot Bay) and potentially to the LDW
- LDW Water Intrusion
- Saltwater/Freshwater Interface
- Water Table
- Tidally influenced Water Level

Notes

1. Schematic figure; not to scale.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Acronyms/Abbreviations

MHHW - Mean Higher High Water
MLLW - Mean Lower Low Water
MSL - Mean Sea Level

Approximate Scale

Vert: 1"-20'
Horz: 1"-500'

LANDAU ASSOCIATES

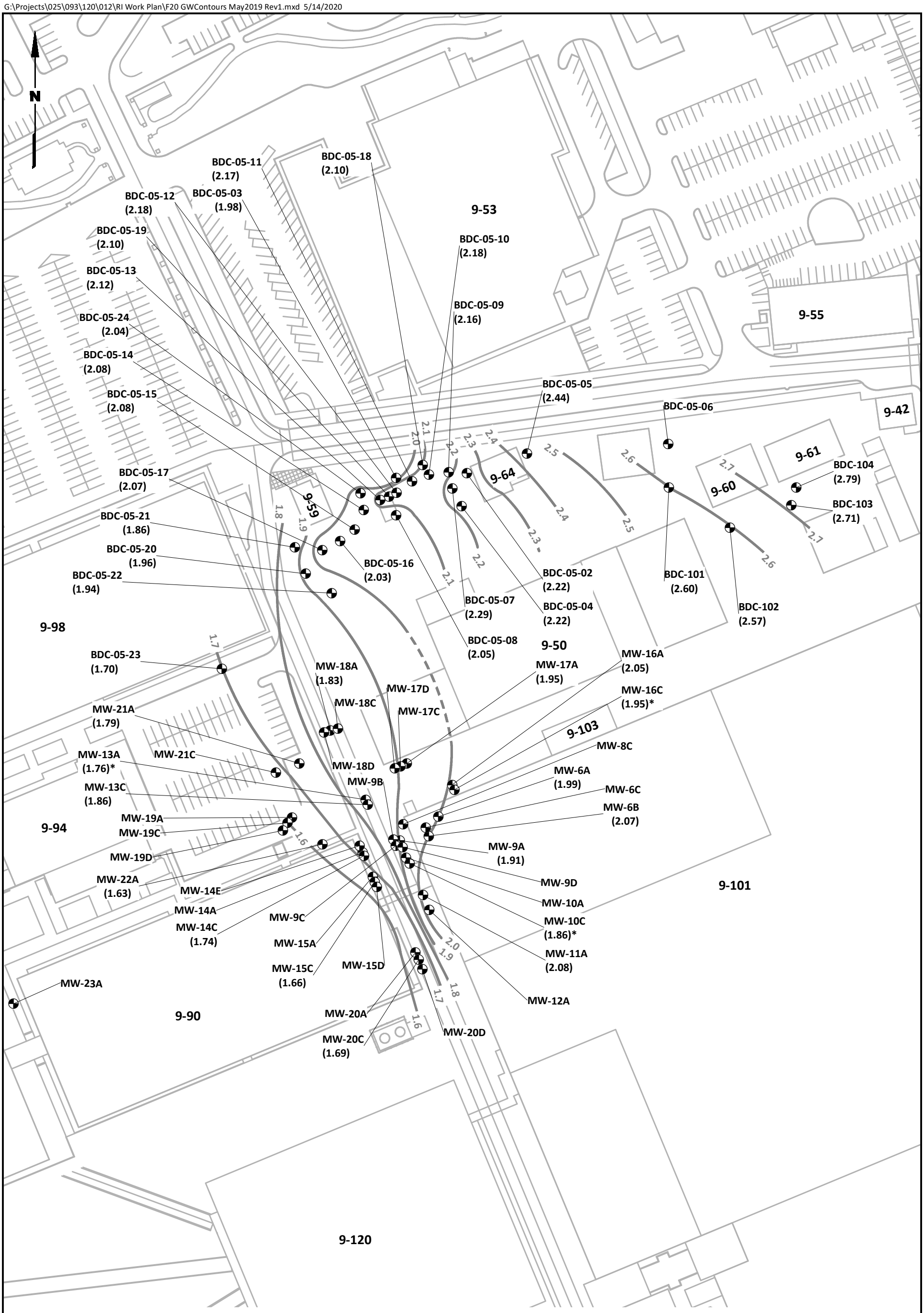
Boeing Developmental Center
Tukwila, Washington

Hydrogeology Conceptual Site Model

Figure 19

Landau Associates | G:\Projects\025\093\120\012\RI Work Plan\F19 HydroGeo CSM.dwg | 4/29/2020 5:57 PM | ezick

G:\Projects\025\093\120\012\RI Work Plan\F20 GWContours May2019 Rev1.mxd 5/14/2020



Legend

- Monitoring Well
- Groundwater Contour
- Groundwater Contour (Approx.)

Notes

1. Contours based primarily on A-Zone wells.
2. * Anomalous groundwater not used.

0 100 200

Scale in Feet

Data Sources: Boeing; Esri World Imagery.

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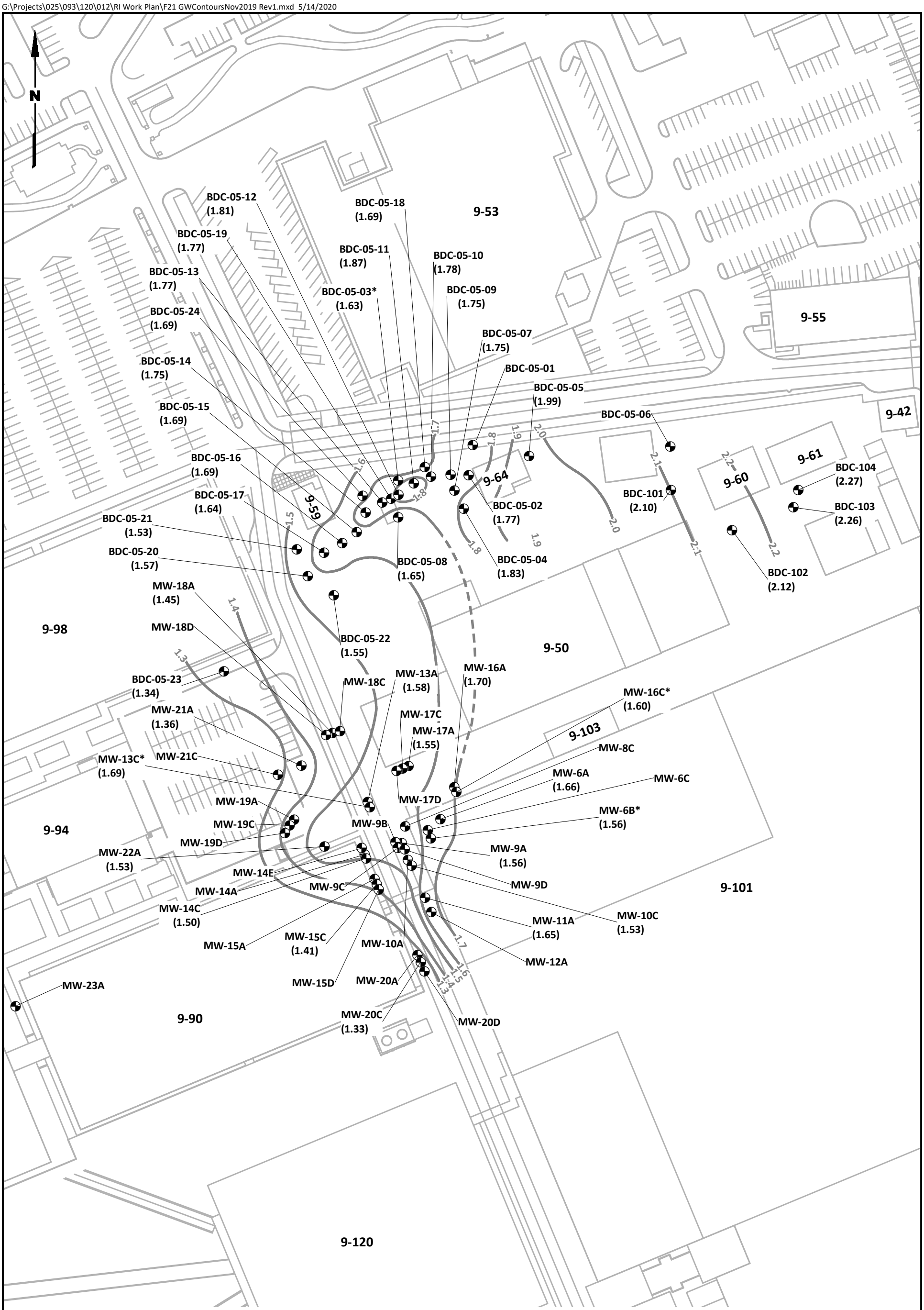
Boeing Developmental Center
Tukwila, Washington

Groundwater Elevation Contours - May 2019

Figure 20

G:\Projects\025\093\120\012\RI Work Plan\F21 GWContoursNov2019 Rev1.mxd 5/14/2020



Legend

- Monitoring Well Location and Designation
- Groundwater Contours

Notes

1. Contours based primarily on A-Zone wells.
2. * Anomalous groundwater not used.

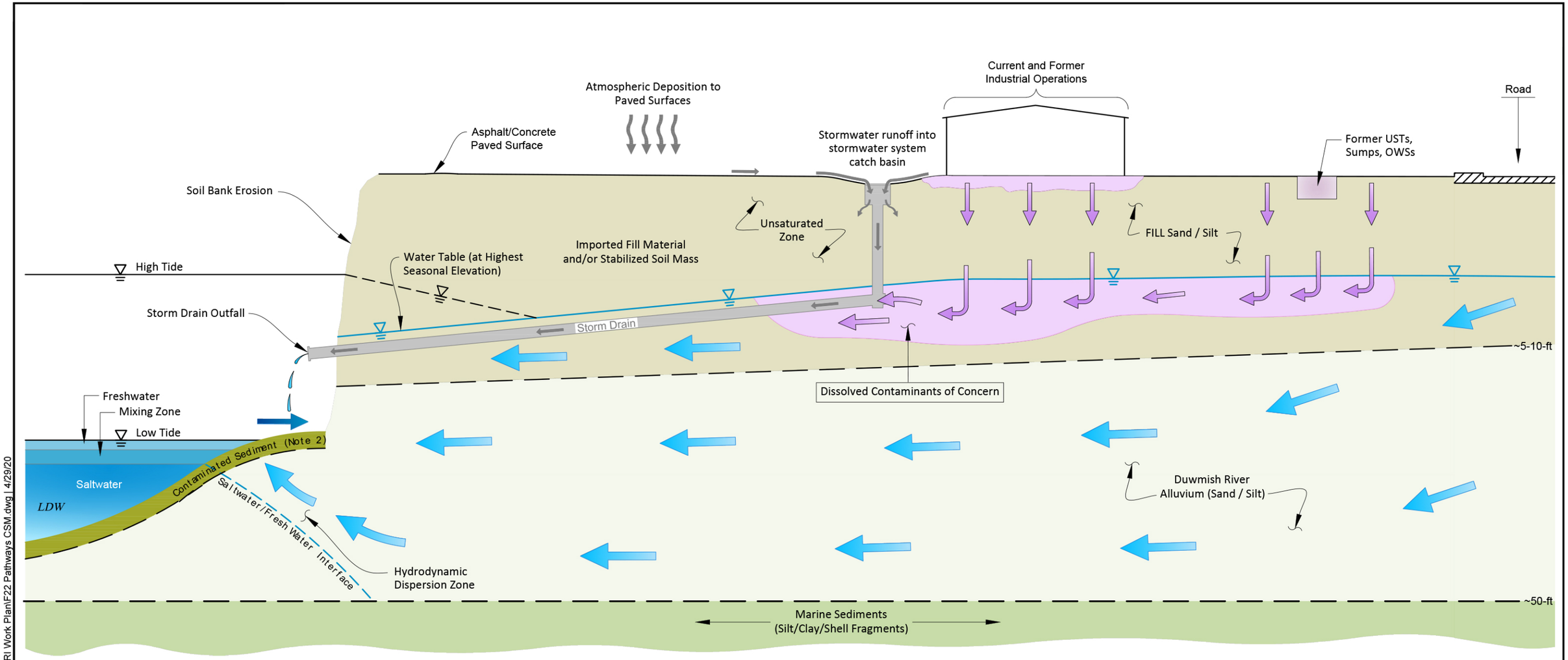
0 100 200

Scale in Feet

Data Sources: Boeing; Esri World Imagery.

LANDAU ASSOCIATES

Boeing Developmental Center Seattle, Washington	**Groundwater Elevation Contours - November 2019**	Figure 21



Legend

- Water Table
- Tidally Influenced Water Level
- Conceptual Boundary Between Stratigraphic Units
- Groundwater Flow Direction (5)
- Potential Transport of Dissolved Contaminants
- LDW Water Intrusion

Notes

1. Site soil covered with asphalt/concrete cap or buildings, exposure risk only for utility workers during intrusive activities.
2. Stormwater/stormwater solids and LDW sediments are being addressed under a separate stormwater Agreed Order, and Lower Duwamish Waterway (LDW) sediment cleanup, respectively.
3. Direct uptake or consumption of aquatic organisms.
4. Figure is schematic and not to scale.
5. See Hydrogeology Conceptual Model (Figure 19) for further information concerning groundwater flow and geologic units.
6. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Abbreviations and Acronyms:

✓ = potential receptor/complete exposure pathway

O = incomplete exposure pathway

Blank = no applicable receptors or exposure pathways

Contaminated Media	Potential Receptors			Potential Exposure Pathways		
	Human	Terrestrial Ecological	Aquatic Ecological	Direct Contact	Ingestion	Inhalation
Soil	✓			✓ (1)		
Ground Water	✓			O	O	
Stormwater (2)		✓	✓		✓ (3)	
Sediment (2)		✓	✓	✓	✓ (3)	
Soil Gas/Air	✓					O
Atmospheric		✓	✓		✓ (3)	

LANDAU ASSOCIATES

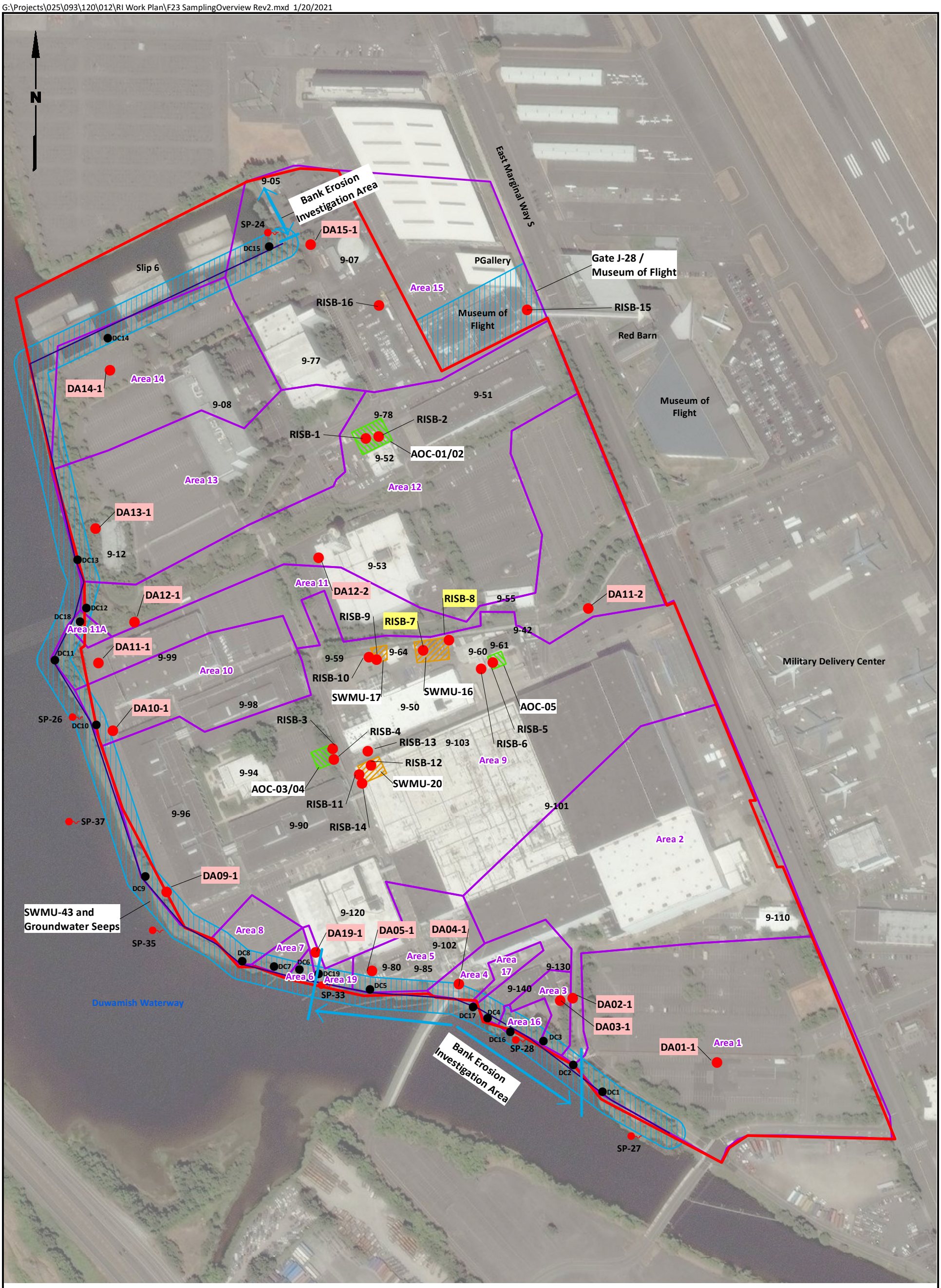
Boeing Developmental Center
Tukwila, Washington

Exposure Pathways Conceptual Site Model

Figure 22

LANDAU ASSOCIATES, INC. | G:\Projects\025\093120\012\RI Work Plan\F22 Pathways CSM.dwg | 4/29/20

G:\Projects\025\093\120\012\RI Work Plan\F23 SamplingOverview Rev2.mxd 1/20/2021



Legend

- RISB-5 ● Proposed Soil Boring
- ● Outfall
- Seep Sampling Location
- DA01-1 Split Samples for PCBs in Soil and Groundwater
- RISB-7 Split Samples for PCBs in Soil
- Facility Boundary
- Drainage Areas
- AOCs
- SWMUs
- Other Investigation Areas

Notes

1. Stormwater sewer system (outfalls, drainage areas, etc.) designated SWMU-43.
2. Drainage Area boundaries and outfall locations are subject to change due to planned modifications required for stormwater treatment.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Sources: Boeing; Esri World Imagery.

0 300 600

Scale in Feet

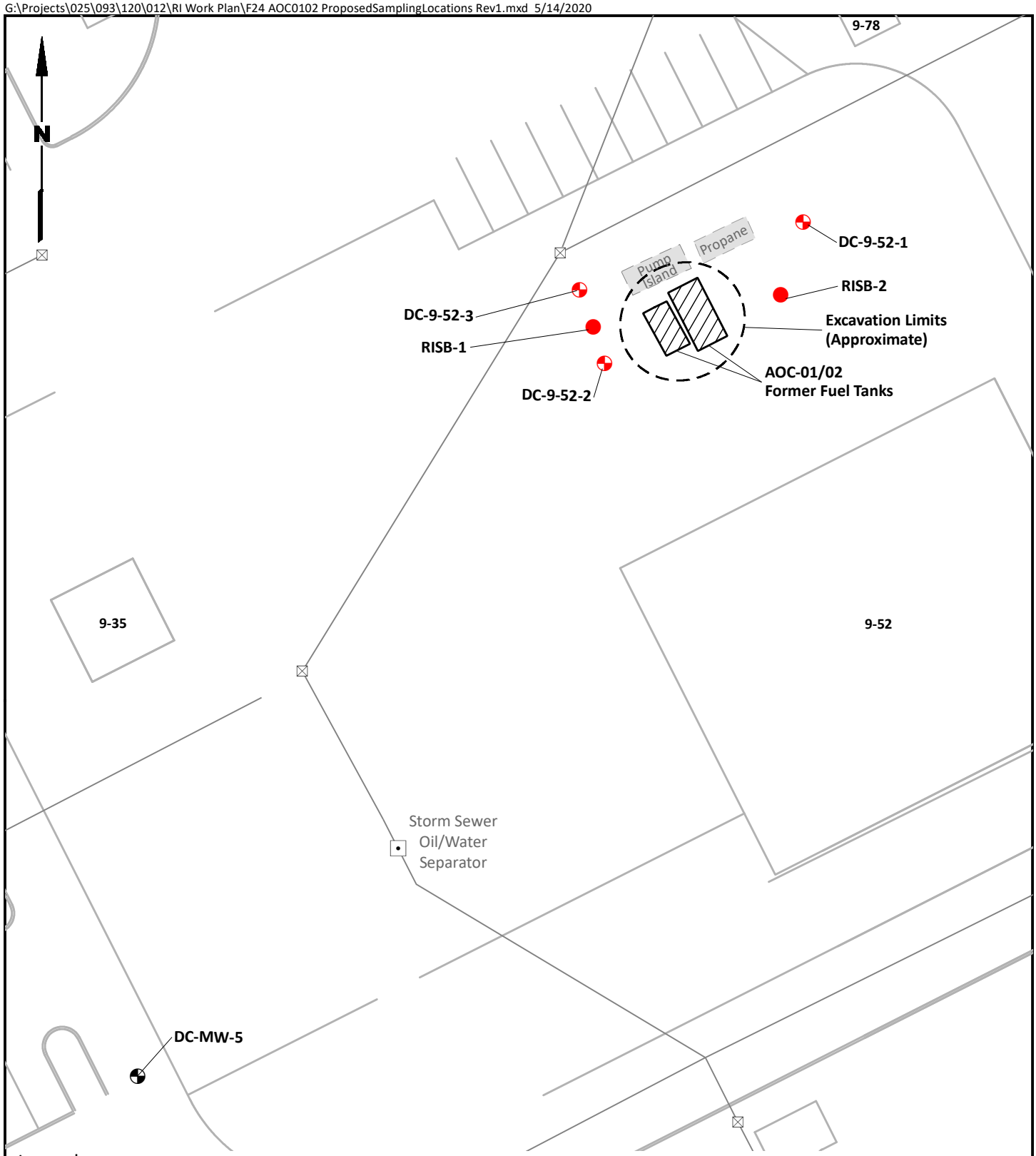
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

Overview of Proposed Sampling

Figure 23

G:\Projects\025\093\120\012\RI Work Plan\F24 AOC0102 ProposedSamplingLocations Rev1.mxd 5/14/2020



Legend

RISB-1	●	Proposed Soil Boring
DC-9-52-1	◔	Proposed Sampling Location
DC-MW-5	◔	Monitoring Well

0 30 60

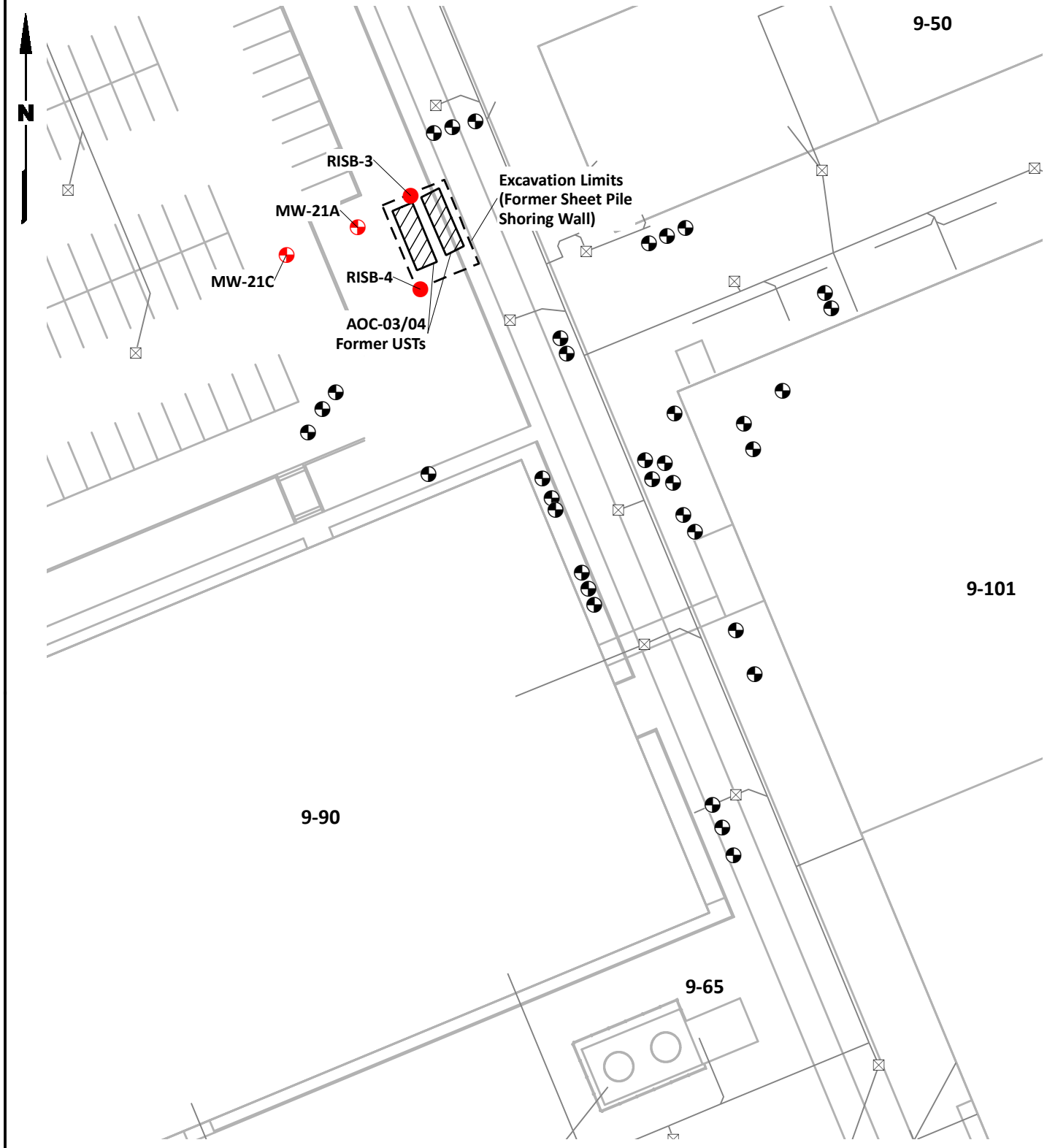
Scale in Feet

Data Sources: Boeing

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**AOC-01/02: Proposed Sampling Locations**	Figure 24

G:\Projects\025\093\120\012\RI Work Plan\F25 AOC0304 ProposedSamplingLocations Rev1.mxd 5/14/2020



Legend

RISB-3 Proposed Soil Boring

MW-21A Proposed Sampling Location

Monitoring Well

0 50 100

Scale in Feet

Data Source: Boeing

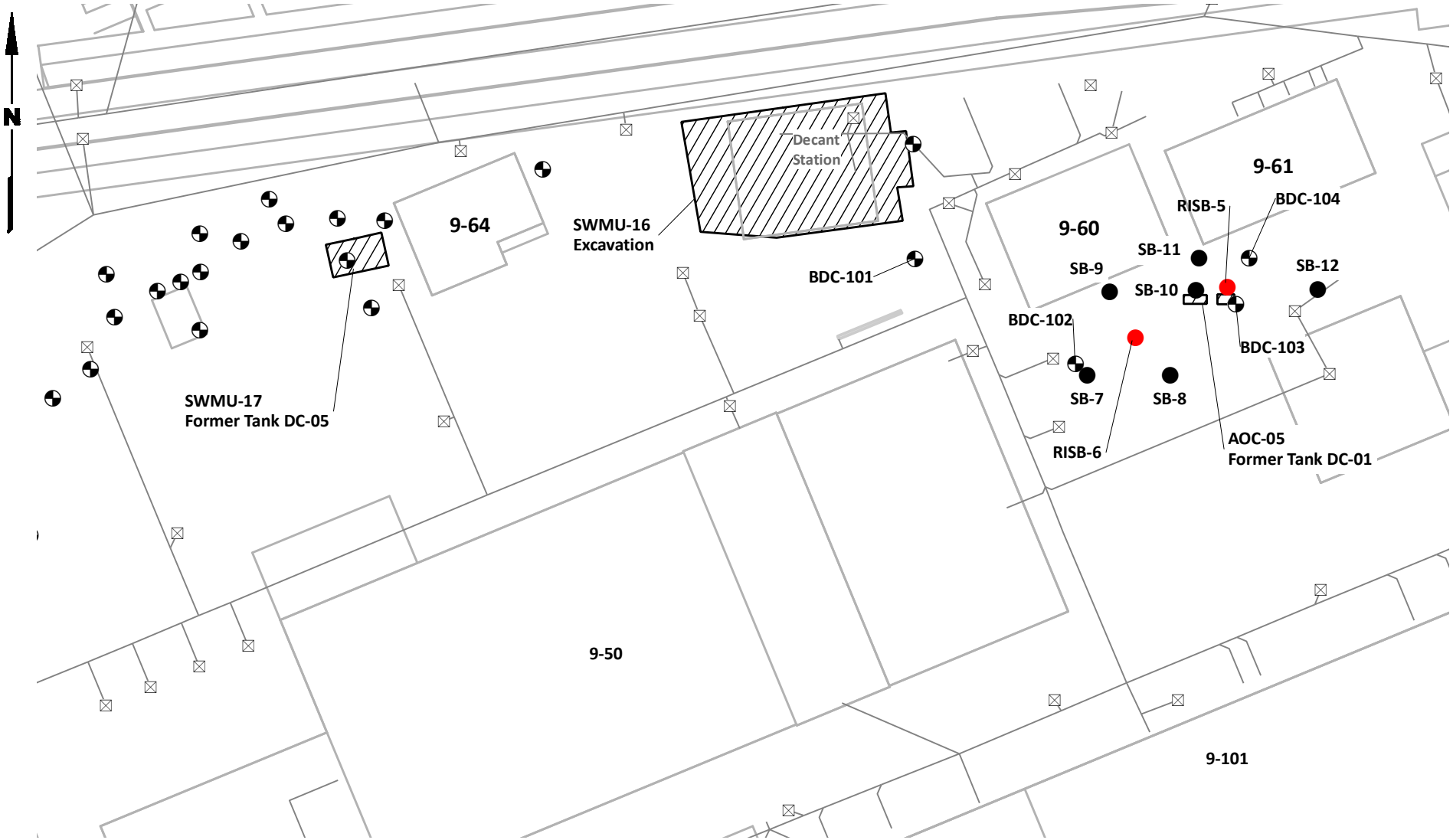
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

AOC-03/04: Proposed Sampling Locations

Figure
25

G:\Projects\025\093\120\012\RI Work Plan\F26 AOC05 ProposedSamplingLocations Rev1.mxd 4/29/2020



Legend

RISB-5	Proposed Soil Boring
BDC-101	Monitoring Well
SB-7	Boring Location

0 60 120

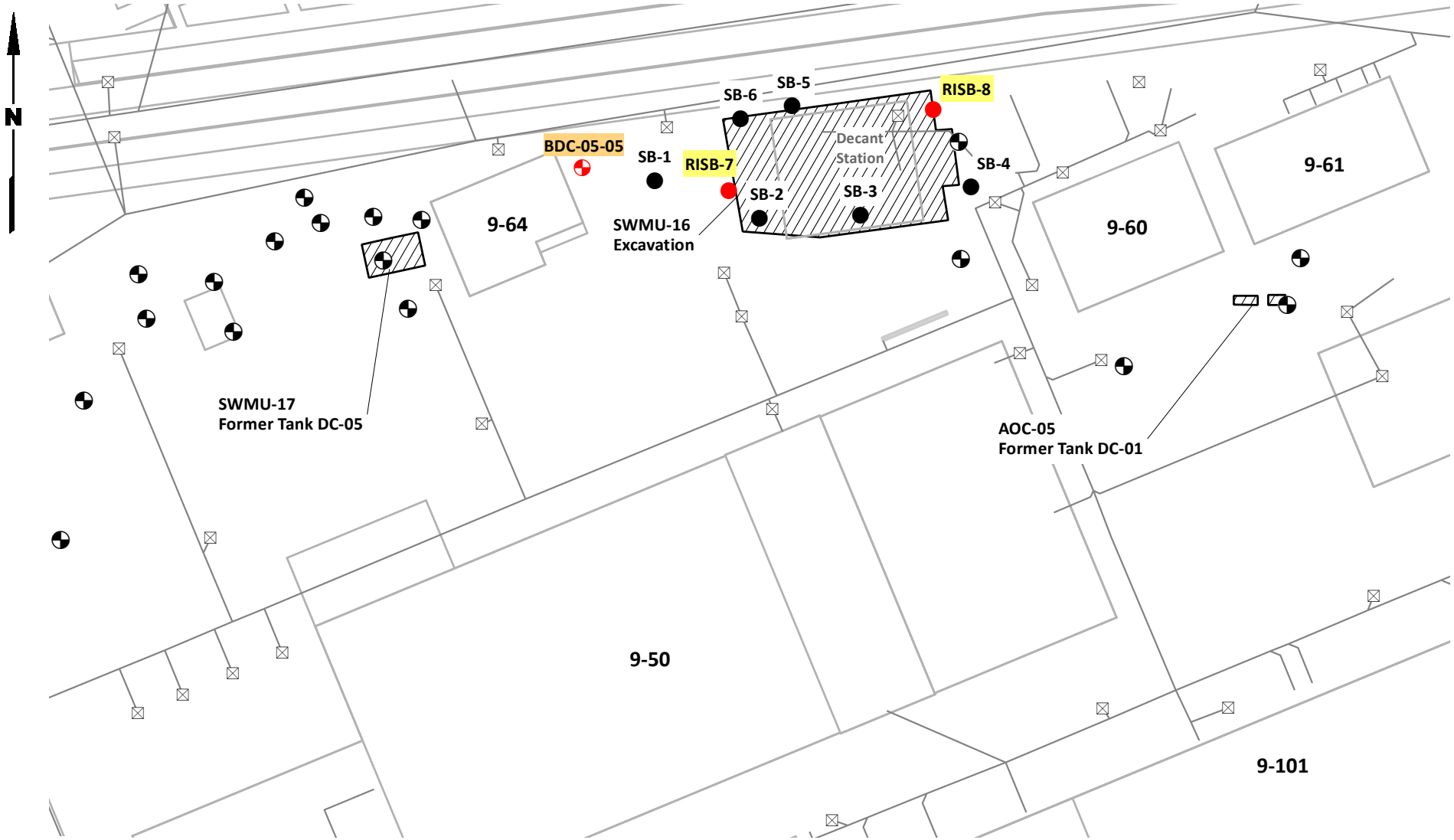
Scale in Feet

Data Source: Boeing

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**AOC-05: Proposed Sampling Location**	Figure 26

G:\Projects\025\093\120\012\RI Work Plan\F27 SWMU16 ProposedSamplingLocations Rev2.mxd 1/20/2021



Legend

- RISB-7 — Proposed Soil Boring
- BDC-05-05 — Proposed Sampling Location
- Monitoring Well
- SB-1 — Boring Location
- BDC-05-05 — Split Sample for PCBs in Groundwater
- RISB-7 — Split Sample for PCBs in Soil

0 60 120

Scale in Feet

Data Source: Boeing

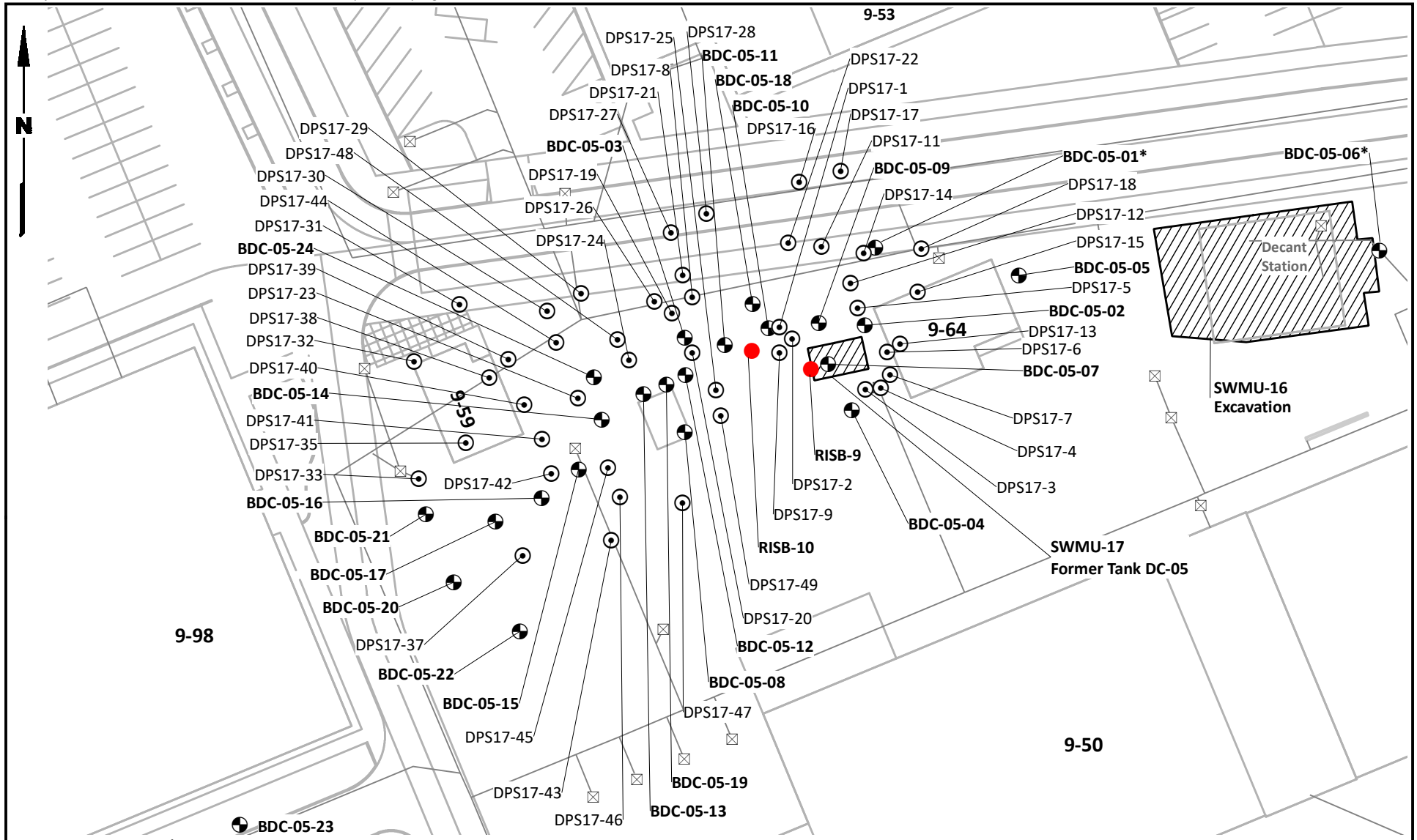
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-16: Proposed Sampling Locations

Figure 27

G:\Projects\025\093\120\012\RI Work Plan\F28 SWMU17 ProposedSamplingLocations Rev1.mxd 5/15/2020



Legend

RISB-9	●	Proposed Soil Boring
BDC-05-05	◓	Monitoring Well
DPS17-72	⊙	Direct-Push Boring
	*	Abandoned Well

Notes

1. BDC-05-01 abandoned January 1995 during Storm Sewer Relocation.
2. BDC-05-06 abandoned ~June 1996 prior to SWMU-16 Soil Excavation.

Data Source: Boeing

0 60 120

Scale in Feet

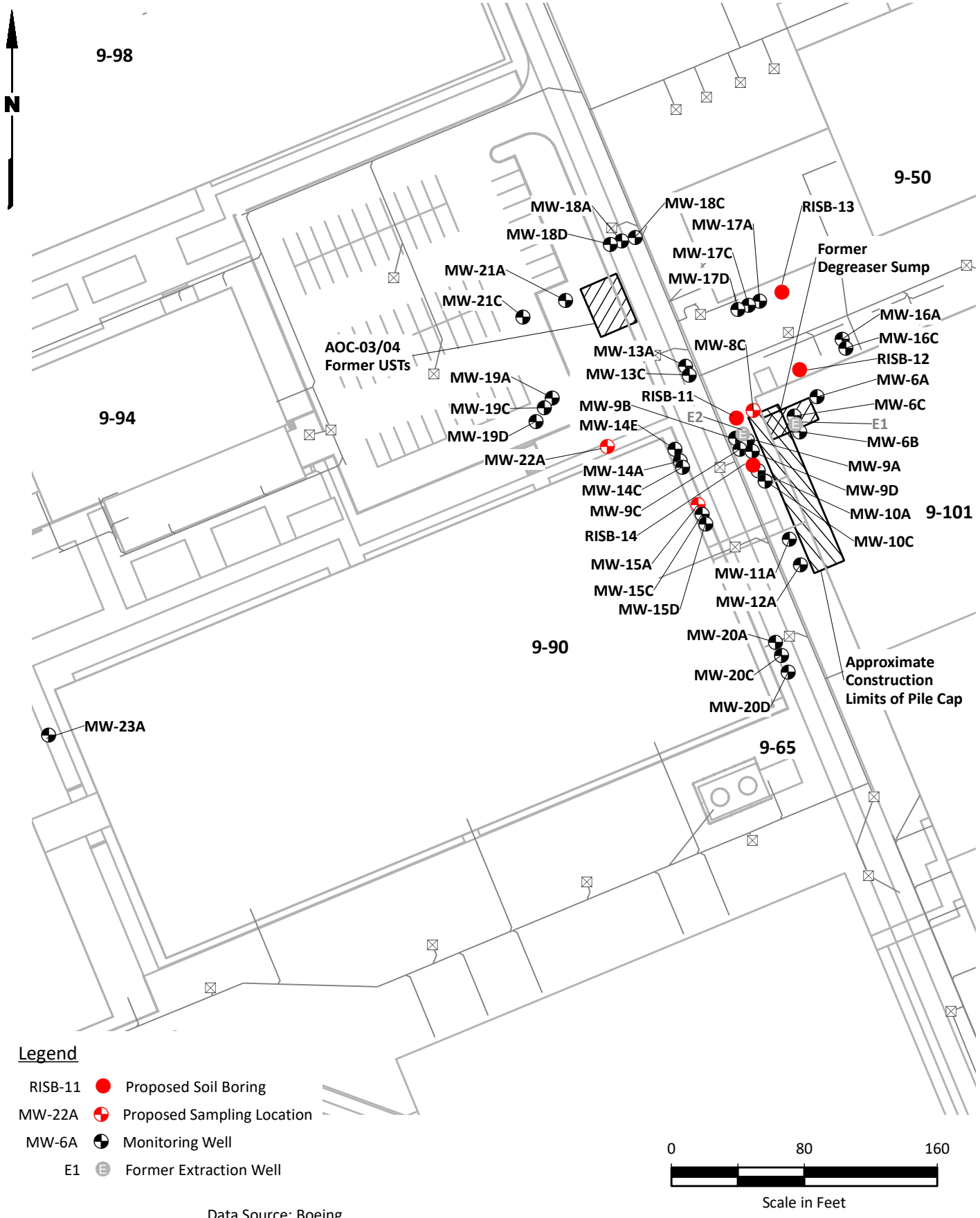
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-17: Proposed Sampling Locations

Figure 28

G:\Projects\025\093\120\012\RI Work Plan\F29 SWMU20 ProposedSamplingLocations Rev1.mxd 4/29/2020



Data Source: Boeing

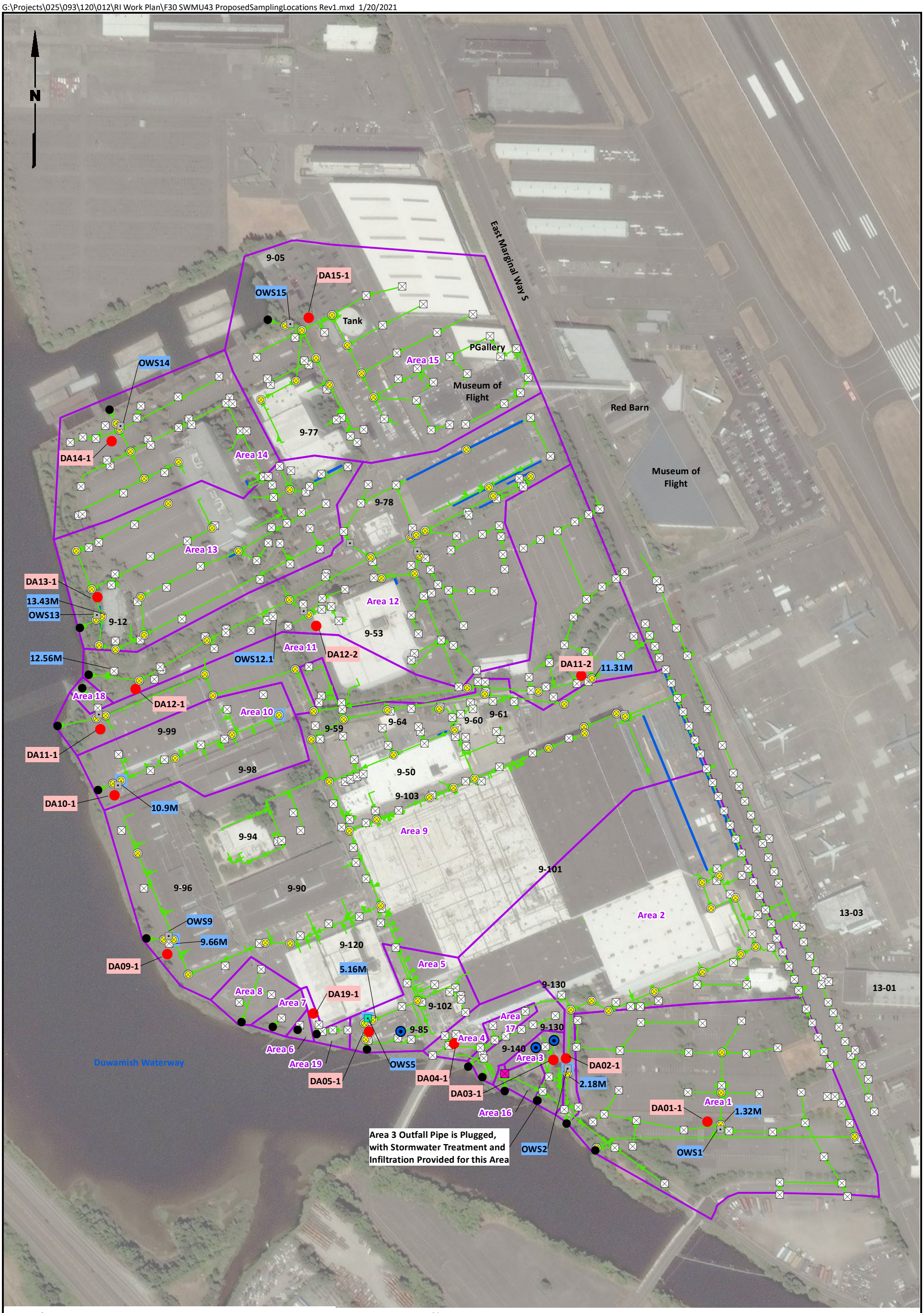
LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-20: Proposed Sampling Locations

Figure
29

G:\Projects\025\093\120\012\RI Work Plan\F30 SWMU43 ProposedSamplingLocations Rev1.mxd 1/20/2021



Legend

- Catch Basin
- Manhole
- Oil/Water Separator
- Outfall
- Roof Downspout Filter Box
- DA01-1 Split Samples for PCBs in Soil and Groundwater
- Sampling Location with Data Available
- Bulk MetalZorb™ Media
- Mesh Bag Filter with MetalZorb™
- Drainage Trench
- Storm Drain Line
- Drainage Areas

Data Sources: Boeing; Esri World Imagery.

Notes

1. Locations of storm drain features are approximate.
2. Sampling data provided in Appendix J.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 300 600

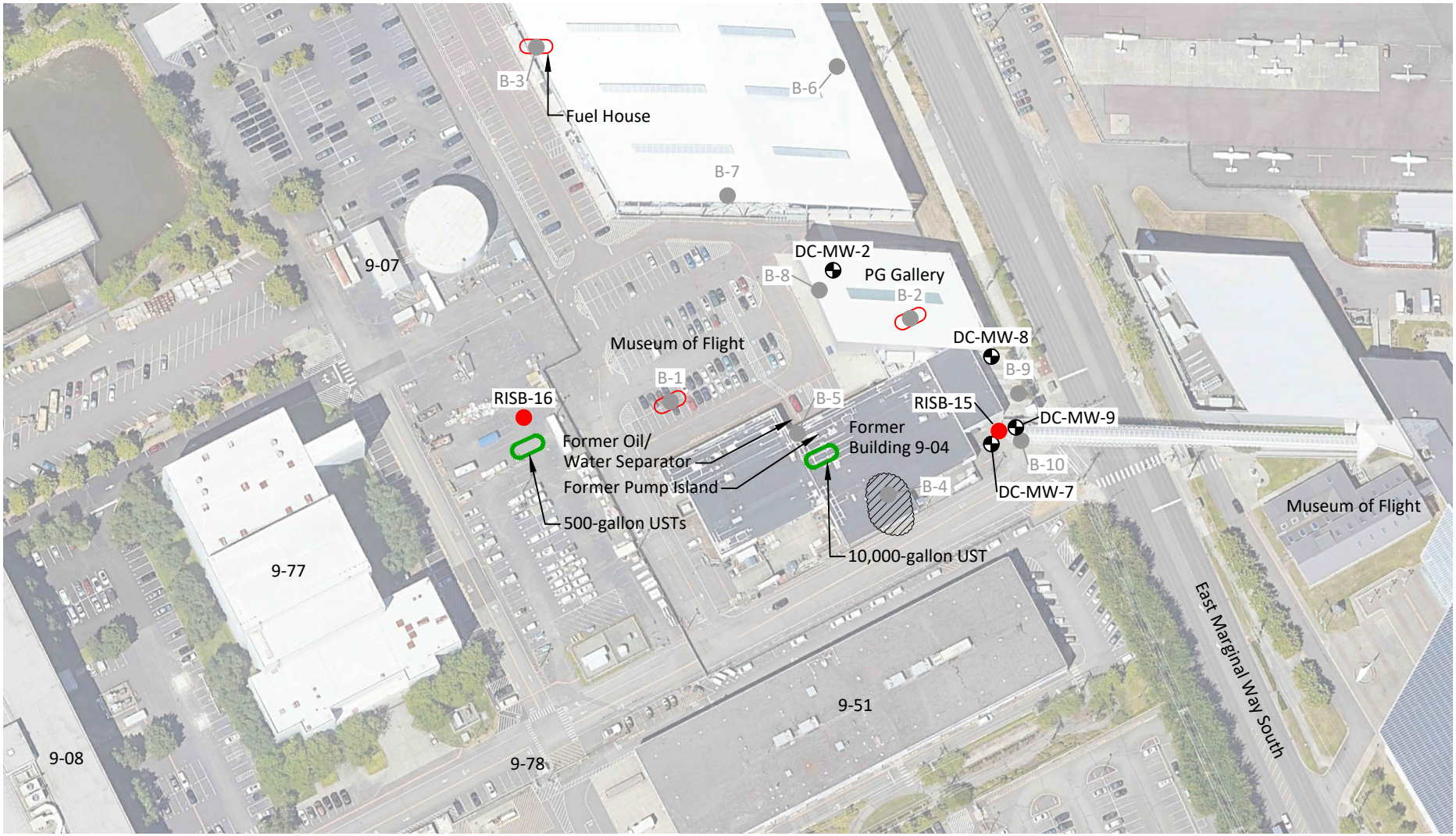
Scale in Feet

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-43:
Proposed Sampling Locations

Figure
30



Legend

RISB-15	Proposed Soil Boring
DC-MW-7	Former Monitoring Well
B-1	Former Soil Boring
	Possible Location of UST Based on GPR
	Confirmed Location of UST
	Possible Location of Spill

Note

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

0 150 300

Scale in Feet

Source: GeoEngineers, 1999

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

Gate J-28/Museum of Flight Proposed Sampling Location

Figure 31

Table 1
Prior Investigation and Cleanup Summary
Boeing Developmental Center
Tukwila, Washington

Area	Source	PCOC(s)	Corrective Action		Further Action		Ongoing Work (a)	
			Action(s)	Year Completed	Action(s)	Year Completed	Action	Type
AOC-01/02	Former fuel USTs (unleaded gasoline and diesel)	TPH-D, TPH-G, BTEX, and metals (cadmium and copper)	USTs removed and replaced; soil and groundwater sampling, monitoring well installation	1991	Regular groundwater sampling until PCOC concentrations below detection limits for two consecutive monitoring events	2002	None	N/A
AOC-03/04	Former No. 5 oil USTs	TPH-D and TPH-O	USTs removed and replaced; soil and groundwater sampling, monitoring well installation	1992	Regular groundwater sampling until PCOC concentrations below detection limits for four consecutive monitoring events	2006	None	N/A
AOC-05	Former fuel UST (unleaded gasoline)	TPH-G, BTEX, nitrate, and nitrite (ongoing bioremediation)	UST removed; groundwater sampling, monitoring well installation	2001	ORC® injection to stimulate aerobic aquifer conditions, anaerobic bioremediation pilot testing, regular groundwater sampling	2007	Full-scale bioremediation and regular groundwater monitoring	Interim Action
SWMU-16	Former regulated materials storage area	VOCs, metals, PCBs, and PAHs	Buildings and storage bays removed; soil excavation, soil and groundwater sampling	2001	None	N/A	None	N/A
SWMU-17	Former sump and UST	PCE, TCE, cDCE, VC, metals (arsenic and copper), and TPH	Sump and UST removed; soil and groundwater sampling, monitoring well installation	1988	Regular groundwater sampling, downgradient data gaps investigation, anaerobic bioremediation pilot testing	2008	Full-scale bioremediation and regular groundwater monitoring	Interim Action
SWMU-20	Former degreaser pit	PCE, TCE, cDCE, VC, benzene, and naphthalene	Degreaser pit and sumps closed and backfilled; Phase I, II, and III ESAs, monitoring well installation, soil excavation for building structural improvements, pump-and-treat system operation	2001	Shutdown pump-and-treat system, groundwater sampling to observe PCOC rebound	2004	Full-scale bioremediation transitioned to monitored natural attenuation with regular groundwater monitoring	Interim Action
SWMU-43	Stormwater sewer system	VOCs, metals (copper and zinc), TPH-D, PCBs, and PAHs	Internal training, BMPs, sediment and building materials sampling, stormwater sampling	N/A	None	N/A	Regular stormwater sampling and BMP maintenance	Corrective Action (b)
Gate J-28/ Museum of Flight	Unidentified off-site source	TPH	UST surveys and removal, soil and groundwater sampling, Phase I and II ESAs	2001	Regular groundwater sampling until PCOC concentrations below cleanup levels	2004	None	N/A

Abbreviations and Acronyms:

AOC = Area of Concern
AST = aboveground storage tank
BMP = best management practice
BTEX = benzene, toluene, ethylbenzene, xylenes
cDCE = *cis* -1,2-dichloroethene
ESA = environmental site assessment
LAI = Landau Associates, Inc.
N/A = not applicable
ORC® = Oxygen Release Compound (Regenesis®)
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
PCE = tetrachloroethene
PCOC = potential contaminant of concern
SWMU = solid waste management unit
TCE = trichloroethene
TPH = total petroleum hydrocarbons
TPH-D = diesel-range total petroleum hydrocarbons
TPH-G = gasoline-range total petroleum hydrocarbons
TPH-O = oil-range total petroleum hydrocarbons
UST = underground storage tank
VC = vinyl chloride
VOC = volatile organic compound

Notes:

(a) Work that continues as of the completion of this *Remedial Investigation Work Plan (2020)*.
(b) Stormwater sewer system corrective action is performed per Agreed Order No. 15600 and is separate from remedial investigation work.

Table 2
SWMU-20 Analytical Results Summary
Boeing Developmental Center
Tukwila, Washington

Naphthalene (µg/L)

	May-96	Aug-96	Nov-96	Feb-97	May-97	Aug-97	Nov-97	Jun-98	Oct-98	Jun-99	Nov-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Nov-03	May-04	Aug-04	Oct-04	Feb-05	Mar-05	May-05	Aug-05	Nov-05	Feb-06	May-06	Aug-06	Nov-06	Feb-07
06A																				5	5	5.0	5.0		5.0	5.0	5	5	5.0	5	0.5	5
06B	1	**2.8**	1	1	1	1	1	1	**1.4**	1	1	1	1	**4.5**	**1.8**	5	5	5	5	5	5	5.0	5.0		10	5.0	5	5	5.0	5	**0.6**	5
06C	**29.26**	**10.4**	**9.1**	**8.8**	**7.2**	1	**18.4**	**3**	**25.1**	**3.4**	1	**7.7**	**44.97**	**9.73**	**2.8**	5	5	5	**220**	**14**	5	5	5.0		5.0	5.0	5	5	5.0	5	**5.0**	5
08C	**351.9**	**401**	**155**	**370**	**234**	**118**	**292**	**600**	**38.6**	**230**	**137**	**109.2**	**174.1**	**125**	**210**	**180**	**290**	**390**	**300**	**130**		**180**			**130**		**82**		**910**		**440**	
09A	50	3.33	10	4	5	1	**7**	1	10	1	10	10	**8.65**	**3.63**	1	5	5	75	100	100	15	25	50		5.0	5.0	5	5	5.0	5	0.5	5
09B	10	2	1	1	**13.8**	**22.4**	2	3.33	10	**3.4**	**4.6**	2	**11.2**	**2.24**	**3.1**	5	5	5	5	15	25	25	50		5.0	5.0	5	5	5.0	5	0.5	5
09C	1	**1.2**	1	**8.8**	**6.5**	1	**25**	1	1	**9.9**	**6.8**	1	**1.67**	**1.8**	**1.3**	5	5	5	5	5	5	**7.7**	**68**		**51**	**29**	**12**	**5.1**	5.0	5	**14**	**18**
09D	1	**1.3**	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5		5			5.0		5		5.0		2.5	
10A	10	**4.2**	3.33	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5	5	5	5		5.0	5.0	5	5	5.0	5	0.5	5
10C	**14.27**	**30.5**	**6.3**	**56.1**	**6.4**	**7.6**	**5.8**	**2.8**	1	**3.8**	**4.7**	**2.7**	**5.77**	1	**36**	**5.0**	5	5	5	**9.4**		5			5.0		5		5.0		0.5	
11A	1	1	1	1	1	1	1	1	1	1	1	**5.1**	1	1	1	5	5	5	5	5		5			5.0		5		5.0		5.0	
12A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5		5			5.0		5		5.0		0.5	
13A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5		5			5.0		5		5.0		0.5	
13C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5		5			5.0		5		5.0		**16**	
14A	1	10	5	4	2	2	2	1	1	**150**	**4.8**	**235**	**113.23**	**84.7**	**35**	**5.7**	5	5	5	5	5	25.0	25.0		50.0	50	15	5	10	5	**7.0**	5
14C	2	10	1	10	10	10	**11.8**	**7.2**	**6.5**	**6.3**	**7.3**	**17.2**	**8.7**	**6.79**	**3.5**	5	5	5	5	5		5			5.0		5		5.0		**6.3**	
14E	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5		5			5.0		5		5.0		0.5	
15A	**423.67**	**239**	**152**	**247**	**136**	**67.3**	**465**	**1721**	**916**	**58.9**	**561**	**797**	**695.6**	**985.5**	**1100**	**840**	**510**	**370**	**490**	**700**		**430**			**440**		**390**		**220**		**180**	
15C	1	**1**	1	**4.4**	10	10	10	3.33	**4.8**	2	2	**29.8**	1	1	1	5	5	5	5	5		5			5.0		5		5.0		0.5	
15D								1	1	1	1	1	1	1	**7.4**	5	5	5	5	5		5			5.0		5		5.0		2.5	
16A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**3.1**	5	5	5	5	5		5			5.0		5		5.0		0.5	
16C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5		5			5.0		5		5.0		0.5	
17A	1	**62**	1	1	1	1	1	1	1	1	1	1	1		1	5	5	5	5	5		5					5		5.0		0.5	
17C	1	1	**26.6**	1	**0.6**	**37.3**	**106**	1	1	**31.9**	**16.6**	**13.7**		**12.12**																		
17D	1	1	1	1	1	1	1	1	1	1	1	1		1																		
18A	1	1	1	1	1	1	1	1	1	1	1	1	1	1						5												
18C	1	1	1	**1.7**	1	1	1	1	1	1	1	**1.1**	1	1	1	5	5	5	5	5		5			5.0		5		5.0		0.5	
18D	1	1	1	1	1	1	1	1	1	1	1	1	1	1																		
19A	1	1	1	1	1	1	1	1	1	1	1	1	1	**1.54**						5			5		5.0	5.0	5	5	5.0	5	0.5	5
19C	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5	5	5	5		5			5.0		5		5.0		**0.5**	
19D	1	1	1	1	1	1	1	1	1	1	1	1	1	1																		
20A	1	1	1	1	1	1	1	1	1	1	1	1	1	**5.48**																		
20C	1	1	1	1	1	1	1	1	1	1	1	1	1	**1.81**	1	5	5	5	5	5		5			5.0		5		5.0		**0.8**	
20D	1	1	1	1	1	1	1	1	1	1	1	1	1	1																		
21A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5															
21C														**207.4**	1	5	5															
22A																								**9.9**	**140**	**180**	**170**	**210 J**	**120**	**200**	**140**	**110**
23A																								**19**	**130**	**100**	5	**45**	**69**	**140**	**9.0**	**26**

Table 2
SWMU-20 Analytical Results Summary
Boeing Developmental Center
Tukwila, Washington

Naphthalene (µg/L)

	May-07	Nov-07	May-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	May-12	Nov-12	May-13	Nov-13	May-14	Nov-14	Apr-15	Oct-15	Nov-16	May-17	Nov-17	May-18	Nov-18	May-19	Nov-19
06A	5	0.5	5.0	5	20	5	5.0	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	0.5	0.5
06B	5	0.5	5.0	5	5.0	5	5.0	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**0.7**	0.5	5	0.5	5	5
06C	5	**4.6**	5.0	5	5.0	5																			
08C	**500**	**540**	**180**	**1100**	**62**	**65**																			
09A	5	5.0	0.5	5	50	25	5.0	5	5	**5.3**	**9.5**	**7.5**	**56**	**23**	**9.9**	**8.7**	**2.6**	**1.8**	**0.9**	**100**	**5.8**	**90.7**	**9.51**	**3.26**	**0.86**
09B	5	5.0	**0.6**	5	5.0	5																			
09C	**5.5**	5.0	**6.7**	5	**56**	**69**																			
09D	5	5.0	0.5	5	5.0	5																			
10A	5	5.0	5.0	5	10	5	5.0	5	5	0.5	0.5	0.5	0.5	0.5	2.5	0.5									
10C	5	5.0	0.5	5	**100**	39	12	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**10**	0.5	**8.8**	**7.7**	**8.6**	**4.27**	**1.18**	0.5	0.5
11A	5	5	0.5	5	5.0	5	5.0	5	5	0.5	0.5	5	5.0	5	5.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
12A	5	5	0.5	5	5.0	5	5.0	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5									
13A	0.5	5	0.5	5	5.0	5	5.0	5	5	5.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
13C	**16**	5	**0.5**	5	5.0	5	22	**6.5**	5	5.0	0.5	5	5.0	5	2.5	0.5	**3.3**	0.5	0.5	**14**	**31**	**25.1**	**5.54**	**0.53**	0.5
14A	5	5.0	5.0	5	5.0	5	5.0	5	5	**0.5**	0.5	**0.8**	0.5	**0.7**	0.5	0.5									
14C	**6.2**	5.0	5.0	5	5.0	5	15	5	5	0.5	0.5	5	5.0	5	2.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
14E	5	5.0	5.0	5	5.0	5																			
15A	**72**	**170**	**180**	**230**	**170**	**190**	**310**	**240**	**210**	**190**	**170**	**120**	**84**	**180**	**89**	**190**									
15C	5	5.0	5.0	5	5.0	5	5.0	5	5	0.5	0.5	5	5.0	5	5.0	0.5	0.5	0.5	0.5	0.5	0.5	5	5	0.5	0.5
15D	5	5.0	5.0	5	5.0	5																			
16A	5	5.0	0.5	5	5.0	5	5.0	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	**0.6**	0.5	0.5	5	5	0.5	0.5
16C	5	5.0	0.5	5	5.0	5	5.0	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
17A	0.5	5.0	0.5	5	5.0	5	5.0	5	5	5.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	5	5	0.5	0.5
17C																									
17D																									
18A																									
18C	**0.6**	5.0	0.5	**86**	**47**	5																			
18D																									
19A	5	5.0	5.0	5	5.0	5																			
19C	5	5.0	5.0	5	5.0	5																			
19D																									
20A																									
20C	0.5	5.0	5.0	5	5.0	5	5.0	5	5	5.0	0.5	5	5.0	5	5.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
20D																									
21A																									
21C																									
22A	**100**	**25**	**41**	**32**	**51**	**15**	**14**	**16**	**20**	**12**	**15**	**9.2**	**11**	**7.1**	**9.8**	**6.5**	**6.2**	**4.7**	**110**	**200**	**220**	**608**	**302**	**783**	**738**
23A	**36**	**6.1**	**5.3**	5	**9.8**	5																			

Abbreviations and Acronyms:

µg/L = micrograms per liter
nd = not detected
nt = not tested

Notes:

J = Analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
E = Estimated concentration calculated for an analyte response above the valid instruction calibration range. A dilution is required to obtain an accurate quantification of the analyte.
Bold = detected compound

Table 3
RI Screening Levels
Boeing Developmental Center
Tukwila, Washington

Analyte	CAS No.	Soil (a, b)					Groundwater (a)				
		2002 Preliminary Screening Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (c)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units	2013 Proposed Cleanup Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (f)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units
Total Petroleum Hydrocarbons				NWTPH-Gx					NWTPH-Gx		
Gasoline Range	86290-81-5	100 (g)	30	5.0	30	mg/kg	800	--	100	800	µg/L
				NWTPH-Dx					NWTPH-Dx		
Diesel Range	N/A	2,000 (g)	260	5.00	260	mg/kg	--	--	100	500 (h)	µg/L
Motor Oil Range	N/A	--	2,000	10.0	2,000	mg/kg	--	--	200	500 (h)	µg/L
Total Metals				Method 6010C/6020A					Method 6020A/7470A		
Arsenic	7440-38-2	7	7.0	5.00	7.0	mg/kg	8.0	8.0	0.2	8.0	µg/L
Barium	7440-39-3	250,000	102	0.300	102	mg/kg	--	200	0.5	200	µg/L
Cadmium	7440-43-9	1	1	0.200	1	mg/kg	--	1.2	0.1	1.2	µg/L
Chromium, Total	7440-47-3	5,250,000 (i)	48	0.500	48	mg/kg	--	--	0.5	--	µg/L
Copper	7440-50-8	36	36	0.5	36	mg/kg	8.0	3.1	0.5	3.1	µg/L
Lead	7439-92-1	500	50	2.00	50	mg/kg	--	8.1	0.1	8.1	µg/L
Mercury	7439-97-6	0.07	0.07	0.0250	0.07	mg/kg	--	0.025	0.1	0.1	µg/L
Zinc	7440-66-6	100	86	4.0	86	mg/kg	--	81	4.0	81	µg/L
Dissolved Metals									Method 6020A/7470A		
Arsenic	7440-38-2	--	--	--	--	--	8.0	8.0	0.2	8.0	µg/L
Barium	7440-39-3	--	--	--	--	--	--	200	0.5	200	µg/L
Cadmium	7440-43-9	--	--	--	--	--	--	1.2	0.1	1.2	µg/L
Chromium, Total	7440-47-3	--	--	--	--	--	--	--	0.5	--	µg/L
Copper	7440-50-8	--	--	--	--	--	8.0	3.1	0.5	3.1	µg/L
Lead	7439-92-1	--	--	--	--	--	--	8.1	0.1	8.1	µg/L
Mercury	7439-97-6	--	--	--	--	--	--	0.025	0.1	0.1	µg/L
Zinc	7440-66-6	--	--	--	--	--	--	81	4.0	81	µg/L
Volatile Organic Compounds				Method EPA 8260C/D					Method EPA 8260C/D		
1,1,1,2-Tetrachloroethane	630-20-6	--	38,000	1.00	38,000	µg/kg	--	7.4	0.200	7.4	µg/L
1,1,1-Trichloroethane	71-55-6	3,300,000	370,000	1.00	370,000	µg/kg	--	5,500	0.200	5,500	µg/L
1,1,2,2-Tetrachloroethane	79-34-5	--	1.7	1.00	1.7	µg/kg	--	0.3	0.200	0.3	µg/L
1,1,2-Trichloroethane	79-00-5	230	5.0	1.00	5.0	µg/kg	--	0.9	0.200	0.9	µg/L
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--	2,400,000,000	2.00	2,400,000,000	µg/kg	--	180	0.200	180	µg/L
1,1-Dichloroethane	75-34-3	350,000,000	180,000	1.00	180,000	µg/kg	--	11	0.200	11	µg/L
1,1-Dichloroethene	75-35-4	20	25,000	1.00	20	µg/kg	2,300	130	0.200	130	µg/L
1,2,3-Trichlorobenzene	87-61-6	--	20,000	5.00	20,000	µg/kg	--	--	0.500	--	µg/L
1,2,3-Trichloropropane	96-18-4	--	33	2.00	33	µg/kg	--	--	0.500	--	µg/L
1,2,4-Trichlorobenzene	120-82-1	--	1.4	5.00	5.00	µg/kg	--	0.037	0.500	0.500	µg/L
1,2,4-Trimethylbenzene	95-63-6	--	800,000	1.00	800,000	µg/kg	--	240	0.200	240	µg/L
1,2-Dibromo-3-chloropropane	96-12-8	--	1,250	5.00	1,250	µg/kg	--	--	0.500	--	µg/L
1,2-Dichlorobenzene	95-50-1	--	36	1.00	36	µg/kg	--	4.6	0.200	4.6	µg/L
1,2-Dichloroethane	107-06-2	480	350	1.00	350	µg/kg	--	4.2	0.200	4.2	µg/L
1,2-Dichloropropane	78-87-5	--	16	1.00	16	µg/kg	--	3.1	0.200	3.1	µg/L
1,3,5-Trimethylbenzene	108-67-8	--	800,000	1.00	800,000	µg/kg	--	--	0.200	--	µg/L
1,3-Dichlorobenzene	541-73-1	--	--	1.00	--	µg/kg	--	2.0	0.200	2.0	µg/L
1,3-Dichloropropane	142-28-9	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
1,4-Dichlorobenzene	106-46-7	--	110	1.00	110	µg/kg	--	4.9	0.200	4.9	µg/L
2-Butanone	78-93-3	2,100,000,000	48,000,000	5.00	48,000,000	µg/kg	--	1,700,000	5.00	1,700,000	µg/L
2-Chlorotoluene	95-49-8	--	1,600,000	1.00	1,600,000	µg/kg	--	--	0.200	--	µg/L
2-Hexanone	591-78-6	--	400,000	5.00	400,000	µg/kg	--	--	5.00	--	µg/L
4-Chlorotoluene	106-43-4	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
4-Isopropyltoluene	99-87-6	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
4-Methyl-2-Pentanone (MIBK)	108-10-1	--	6,400,000	5.00	6,400,000	µg/kg	--	470,000	5.00	470,000	µg/L
Acetone	67-64-1	350,000,000	72,000,000	5.00	72,000,000	µg/kg	110,000	--	5.00	110,000	µg/L

Table 3
RI Screening Levels
Boeing Developmental Center
Tukwila, Washington

Analyte	CAS No.	Soil (a, b)					Groundwater (a)				
		2002 Preliminary Screening Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (c)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units	2013 Proposed Cleanup Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (f)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units
Benzene	71-43-2	220,000	8.8	1.00	8.8	µg/kg	2.0	1.6	0.200	1.6	µg/L
Bromobenzene	108-86-1	--	640,000	1.00	640,000	µg/kg	--	--	0.200	--	µg/L
Bromochloromethane	74-97-5	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
Bromodichloromethane	75-27-4	--	15	1.00	15	µg/kg	--	1.8	0.200	1.8	µg/L
Bromoethane	74-96-4	--	--	2.00	--	µg/kg	--	--	0.200	--	µg/L
Bromoform	75-25-2	--	78	1.00	78	µg/kg	--	12	0.200	12	µg/L
Bromomethane	74-83-9	--	1,200	1.00	1,200	µg/kg	--	13	1.00	13	µg/L
Carbon Disulfide	75-15-0	350,000,000	8,000,000	1.00	8,000,000	µg/kg	3,900	400	0.200	400	µg/L
Carbon Tetrachloride	56-23-5	--	2.9	1.00	2.9	µg/kg	--	0.35	0.200	0.35	µg/L
Chlorobenzene	108-90-7	--	1,700	1.00	1,700	µg/kg	--	200	0.200	200	µg/L
Chloroethane	75-00-3	--	--	1.00	--	µg/kg	--	19,000	0.200	19,000	µg/L
Chloroform	67-66-3	2,500	806	1.00	806	µg/kg	9.4	1.2	0.200	1.2	µg/L
Chloromethane	74-87-3	--	--	1.00	--	µg/kg	--	150	0.500	150	µg/L
cis-1,2-Dichloroethene	156-59-2	350,000,000	160,000	1.00	160,000	µg/kg	130	--	0.200	130	µg/L
cis-1,3-Dichloropropene	10061-01-5	--	11	1.00	11	µg/kg	--	2.0	0.200	2.0	µg/L
Dibromochloromethane	124-48-1	--	12	1.00	12	µg/kg	--	2.2	0.200	2.2	µg/L
Dibromomethane	74-95-3	--	800,000	1.00	800,000	µg/kg	--	--	0.200	--	µg/L
Ethylbenzene	100-41-4	250,000	260	1.00	260	µg/kg	1.7	31	0.200	1.7	µg/L
Ethylene Dibromide (1,2-Dibromoethane)	106-93-4	--	500	1.00	500	µg/kg	--	0.27	0.200	0.27	µg/L
Hexachlorobutadiene	87-68-3	--	11	5.00	11	µg/kg	--	0.01	0.500	0.500	µg/L
Iodomethane	74-88-4	--	--	1.00	--	µg/kg	--	--	1.00	--	µg/L
Isopropylbenzene	98-82-8	--	8,000,000	1.00	8,000,000	µg/kg	270	--	0.200	270	µg/L
m,p-Xylene	179601-23-1	7,000,000,000	16,000,000	2.00	16,000,000	µg/kg	1,500 (j)	--	0.400	1,500 (j)	µg/L
Methylene Chloride	75-09-2	7,000	430	2.00	430	µg/kg	--	100	1.00	100	µg/L
Naphthalene	91-20-3	140,000	40	5.00	40	µg/kg	26	1.4	0.500	1.4	µg/L
n-Butylbenzene	104-51-8	--	4,000,000	1.00	4,000,000	µg/kg	--	--	0.200	--	µg/L
n-Propylbenzene	103-65-1	--	8,000,000	1.00	8,000,000	µg/kg	--	--	0.200	--	µg/L
o-Xylene	95-47-6	7,000,000,000	16,000,000	1.00	16,000,000	µg/kg	1,500 (j)	430	0.200	430	µg/L
sec-Butylbenzene	135-98-8	--	8,000,000	1.00	8,000,000	µg/kg	--	--	0.200	--	µg/L
Styrene	100-42-5	4,400,000	300,000	1.00	300,000	µg/kg	--	8,200	0.200	8,200	µg/L
tert-Butylbenzene	98-06-6	--	8,000,000	1.00	8,000,000	µg/kg	--	--	0.200	--	µg/L
Tetrachloroethene	127-18-4	100	30	1.00	30	µg/kg	5.3	2.9	0.200	2.9	µg/L
Toluene	108-88-3	1,450,000	920	1.00	920	µg/kg	1,300	130	0.200	130	µg/L
Total Xylenes	1330-20-7	--	16,000,000	2.00	16,000,000	µg/kg	1,500	330	0.600	330	µg/L
trans-1,2-Dichloroethene	156-60-5	180,000	5,200	1.00	5,200	µg/kg	940	1,000	0.200	940	µg/L
trans-1,3-Dichloropropene	10061-02-6	--	10	1.00	10	µg/kg	--	2.0	0.200	2.0	µg/L
trans-1,4-Dichloro 2-Butene	110-57-6	--	--	5.00	--	µg/kg	--	--	1.00	--	µg/L
Trichloroethene	79-01-6	540	4.4	1.00	4.4	µg/kg	1.4	0.7	0.200	0.7	µg/L
Trichlorofluoromethane	75-69-4	--	24,000,000	1.00	24,000,000	µg/kg	--	120	0.200	120	µg/L
Vinyl Acetate	108-05-4	--	80,000,000	5.00	80,000,000	µg/kg	--	7,800	0.200	7,800	µg/L
Vinyl Chloride	75-01-4	3,300	1.0	1.00	1.0	µg/kg	2.4	0.18	0.200	0.18	µg/L

Table 3
RI Screening Levels
Boeing Developmental Center
Tukwila, Washington

Analyte	CAS No.	Soil (a, b)					Groundwater (a)				
		2002 Preliminary Screening Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (c)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units	2013 Proposed Cleanup Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (f)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units
PAHs								EPA Method 8270D/E SIM			
1-Methylnaphthalene	90-12-0	--	29,000	5.00	29,000	µg/kg	--	--	0.0100	--	µg/L
2-Methylnaphthalene	91-57-6	--	670	5.00	670	µg/kg	--	--	0.0100	--	µg/L
Acenaphthene	83-32-9	70,000	500	5.00	500	µg/kg	--	5.3	0.0100	5.3	µg/L
Acenaphthylene	208-96-8	--	1,300	5.00	1,300	µg/kg	--	--	0.0100	--	µg/L
Anthracene	120-12-7	52,000,000	960	5.00	960	µg/kg	--	2.1	0.0100	2.1	µg/L
Benzo(a)anthracene	56-55-3	220	1.1	5.00	5.00	µg/kg	--	0.00016	0.0100	0.0100	µg/L
Benzo(a)pyrene	50-32-8	--	0.31	5.00	5.00	µg/kg	--	0.000016	0.0100	0.0100	µg/L
Benzo(g,h,i)perylene	191-24-2	--	670	5.00	670	µg/kg	--	--	0.0100	--	µg/L
Benzofluoranthenes, Total	N/A	--	3,200	10.0	3,200	µg/kg	--	--	0.0100	--	µg/L
Chrysene	218-01-9	250	127	5.00	127	µg/kg	--	0.016	0.0100	0.016	µg/L
Dibenz(a,h)anthracene	53-70-3	--	0.57	5.00	5.00	µg/kg	--	0.000016	0.0100	0.0100	µg/L
Dibenzofuran	132-64-9	--	540	5.00	540	µg/kg	--	--	0.0100	--	µg/L
Fluoranthene	206-44-0	370,000	1,700	5.00	1,700	µg/kg	--	1.8	0.0100	1.8	µg/L
Fluorene	86-73-7	2,200,000	540	5.00	540	µg/kg	--	3.7	0.0100	3.7	µg/L
Indeno(1,2,3-cd)pyrene	193-39-5	--	11	5.00	11	µg/kg	--	0.00016	0.0100	0.0100	µg/L
Naphthalene	91-20-3	140,000	40	5.00	40	µg/kg	--	1.4	0.0100	1.4	µg/L
Phenanthrene	85-01-8	--	1,500	5.00	1,500	µg/kg	--	--	0.0100	--	µg/L
Pyrene	129-00-0	15,000,000	2,600	5.00	2,600	µg/kg	--	2.0	0.0100	2.0	µg/L
cPAH TEQ (k)	N/A	--	0.31	--	0.31	µg/kg	--	0.000016	--	0.0100	µg/L
PCBs				EPA Method 8082A					EPA Method 8082A		
Aroclor 1016	12674-11-2	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1242	53469-21-9	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1248	12672-29-6	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1254	11097-69-1	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1260	11096-82-5	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1221	11104-28-2	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1232	11141-16-5	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1268	11100-14-4	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Total PCBs	--	330	0.000027	--	4.00	µg/kg	--	0.000007	--	0.0100	µg/L

Abbreviations and Acronyms:

-- = not applicable
µg/kg = micrograms per kilogram
µg/L = micrograms per liter
CAS = Chemical Abstracts Services
cPAH = carcinogenic polycyclic aromatic hydrocarbo
EPA = US Environmental Protection Agency
MDL = method detection limit
mg/kg =milligrams per kilogram
mg/L = milligrams per liter
N/A = not available
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls
PQL = practical quantitation limit
SIM = selected ion monitoring
SL = screening level

Notes:

(a) Screening levels listed in this table are provided to evaluate laboratory method detection and reporting limits. Screening levels will be revised and updated as needed in the RI Report based on criteria applicable at the time that the RI report is prepared.
(b) Soil results and associated laboratory practical quantitation limits will be reported on a dry weight basis.
(c) Lower Duwamish Waterway preliminary cleanup levels for nonpotable vadose zone (April 2019).
(d) Laboratory practical quantitation limits are defined as the lowest concentrations that can be accurately detected by the analytical method.
(e) The proposed screening level is selected as the lower of the Lower Duwamish Waterway PCUL or preliminary screening level/proposed cleanup level. In those instances when the laboratory PQL is greater than either of these two values, the proposed screening level is raised to the laboratory PQL.
(f) Lower Duwamish Waterway preliminary cleanup levels for nonpotable groundwater (April 2019).
(g) Model Toxics Control Act Method A industrial value.
(h) Model Toxics Control Act Method A cleanup level.
(i) Cleanup level for Chromium III.
(j) 2013 proposed cleanup level for total xylenes.
(k) If one or more of the cPAHs has never been detected in any sample at the site, then a value of zero will be assigned to a non-detected concentration of that cPAH for these calculations. If a cPAH is not detected in a sample but has been detected at the site a value of one-half the reporting limit will be assigned to that cPAH for the purpose of the TEQ calculation.

Table 4
Summary of Proposed Sampling and Analyses
Boeing Developmental Center
Tukwila, Washington

	GROUNDWATER SAMPLING										SOIL SAMPLING								
	Sample Count (c)										Sample Count (d)								
Investigation Area	TPH, diesel- and oil-range (NWTPH-Dx) (a)	TPH, gasoline-range (NWTPH-Gx) (a)	VOCs (8260C)	PCB Aroclors (8082A)	PAHs (8270E-SIM)	Total/dissolved metals (6010C) (b)	Total/dissolved mercury (7471B) (b)	Sampling Scope	Sample Location ID(s)	Screened Interval (bgs)	TPH, diesel- and oil-range (NWTPH-Dx) (a)	TPH, gasoline-range (NWTPH-Gx) (a)	VOCs (8260C)	PCB Aroclors (8082A)	PAHs (8270E-SIM)	Total metals (6010C)	Sampling Scope	Sample Location ID(s)	Sampling Intervals (bgs)
AOC-01/02	3	3	3			3	3	Three existing wells	DC-9-52-1, DC-9-52-2, DC-52-3 (existing)	None	6	6	6				Two soil borings	RISB-1, RISB-2	(7-10') (10-13') (13-16')
AOC-03/04	2							Two existing wells	MW-21A, MW-21C (existing)	None	6						Two soil borings	RISB-3, RISB-4	(7-10') (10-13') (13-16')
AOC-05								None	None	None		6	6				Two soil borings	RISB-5, RISB-6	(7-10') (10-13') (13-16')
SWMU-16			1	1	1	1		One existing well (e)	BDC-05-05 (existing)	None			10	10	10	10	Two soil borings (g)	RISB-7, RISB-8	(WT-3') (3-6') (6-9') (9-12') (12-15') below WT
SWMU-17								None	None	None	6	6	6			6	Two soil borings	RISB-9, RISB-10	(7-10') (10-13') (13-16')
SWMU-20					7			Four new grabs, three existing wells	RISB-11, RISB-12, RISB-13, RISB-14 (grabs) MW-8C, MW-15A, MW-22A (existing)	~12-16' (grab)			24				Four soil borings	RISB-11, RISB-12, RISB-13, RISB-14	(7-10') (10-13') (13-16') (16-19') (19-22') (22-25')
SWMU-43	15	15	15	15	15	15	15	Fifteen new grabs (f)	DA01-1, DA02-1, DA03-1, DA04-1, DA05-1, DA09-1, DA10-1, DA11-1, DA11-2, DA12-1, DA12-2, DA13-1, DA14-1, DA15-1, DA19-1	~12-16' (grab)	45	45	45	45	45	45	Fifteen soil borings (g)	DA01-1, DA02-1, DA03-1, DA04-1, DA05-1, DA09-1, DA10-1, DA11-1, DA11-2, DA12-1, DA12-2, DA13-1, DA14-1, DA15-1, DA19-1	(7-10') (10-13') (13-16')
Gate J-28/Museum of Flight	2	2						Two new grabs	RISB-15, RISB-16	~12-16' (grab)							None	None	None
Groundwater seeps	7	7	7	7	7	7	7	Seven known groundwater seeps	SP-24, SP-26, SP-27, SP‑28, SP-33, SP-35, SP-37	None							None	None	None
Bank Erosion								None	None	None	TBD	TBD	TBD	TBD	TBD	TBD	TBD, based on erosion observed	BE-1, BE-2, etc.	One discrete sample per 20 feet of bank erosion observed

Abbreviations and Acronyms:

AOC = Area of Concern
bgs = below ground surface
ID = identification
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
RCRA = Resource Conservation and Recovery Act
SIM = selected ion monitoring
SWMU = Solid Waste Management Unit
TBD = to be determined
TPH = total petroleum hydrocarbons
VOC = volatile organic compound
WT = water table

Notes:

(a) Washington State Department of Ecology method. All other methods are US Environmental Protection Agency methods.
(b) Samples field filtered.
(c) Maximum number of water samples to be collected per area.
(d) Maximum number of soil samples to be collected per area.
(e) The groundwater sample for PCB Aroclors (8082A) at BDC-05-05 will be collected as a split sample; the primary sample will be analyzed for PCB Aroclors (8082A) and the split sample will be held and potentially analyzed for PCB Congeners (1668C) by Washington State Department of Ecology at a laboratory of their choice.
(f) The groundwater grab samples for PCB Aroclors (8082A) in SWMU-43 will be collected as split samples; the primary samples will be analyzed for PCB Aroclors (8082A) and the split samples will be analyzed for PCB Aroclors (8082A) by Washington State Department of Ecology at a laboratory of their choice.
(g) The soil samples for PCB Aroclors (8082A) in SWMU-16 and SWMU-43 will be collected as split samples; the primary samples will be analyzed for PCB Aroclors (8082A) and the split samples will be held and a subset potentially analyzed for PCB Congeners (1668C) by Washington State Department of Ecology at a laboratory of their choice.

APPENDIX A

Sampling and Analysis Plan (SAP)

Final
Sampling and Analysis Plan
Remedial Investigation Work Plan
Boeing Developmental Center
Tukwila, Washington

January 27, 2021

Prepared for

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Final
Sampling and Analysis Plan
Remedial Investigation Work Plan
Boeing Developmental Center
Tukwila, Washington

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LIST OF ABBREVIATIONS AND ACRONYMS

°C	degrees Celsius
µS/cm	microsiemens per centimeter
AOC	Area of Concern
ATD	at time of drilling
bgs	below ground surface
Boeing	The Boeing Company
COC	contaminant of concern
DC	Developmental Center
DO	dissolved oxygen
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
EPA	US Environmental Protection Agency
ft	feet, foot
GPS	Global Positioning System
IDW	investigation-derived waste
L/min	liters per minute
LAI	Landau Associates, Inc.
LDW	Lower Duwamish Waterway
LDPE	low-density polyethylene
mL	milliliter
mL/min	milliliters per minute
mV	millivolts
NTU	nephelometric turbidity units
OAR	Boeing Onsite Activities Representative
ORP	oxidation reduction potential
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PID	photoionization detector
ppm	parts per million
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RI	remedial investigation
RI work plan	Boeing DC Remedial Investigation Work Plan
SAP	sampling and analysis plan
SWMU	Solid Waste Management Unit
TPH	total petroleum hydrocarbons
TPH-D	diesel-range total petroleum hydrocarbons

LIST OF ABBREVIATIONS AND ACRONYMS (CONT'D)

TPH-G ..... gasoline range total petroleum hydrocarbons
TPH-O ..... oil-range total petroleum hydrocarbons
USCS ..... Unified Soil Classification System
UST ..... underground storage tank
VOC ..... volatile organic compound
WAC ..... Washington Administrative Code

1.0 INTRODUCTION

Landau Associates, Inc. (LAI) prepared this sampling and analysis plan (SAP), which describes the procedures for conducting field activities during the remedial investigation (RI) at The Boeing Company's (Boeing's) Developmental Center (DC) in Tukwila, Washington (Figure A-1). This SAP is an appendix to the Boeing DC Remedial Investigation Work Plan (RI work plan). The primary objective of this SAP is to provide sampling and analysis procedures and methodologies consistent with accepted procedures such that the data collected will be adequate for use in characterizing environmental conditions at the site. This SAP was prepared in accordance with the requirements of Washington Administrative Code (WAC) 173-340-820.

This SAP addresses RI field work, during which samples of soil and groundwater will be collected at Areas of Concern (AOCs), Solid Waste Management Units (SWMUs), and other areas of interest at the DC facility. The anticipated number of samples and analyses for each medium are summarized in Table A-1, which also describes the anticipated sampling activities for each of the following investigation areas:

- AOC-01/02: former fuel underground storage tanks (USTs)
- AOC-03/04: former No. 5 oil USTs
- AOC-05: former unleaded gasoline UST
- SWMU-16: former regulated materials storage area
- SWMU-17: former sump and UST
- SWMU-20: former degreaser pit
- SWMU-43: stormwater sewer system
- Gate J-28/Museum of Flight
- Groundwater Seeps
- Bank Erosion.

The following sections describe the field procedures to be employed for the planned sampling activities.

2.0 SOIL AND GROUNDWATER SAMPLING

Continuous soil samples will be collected from borings drilled using a direct-push drill rig. Borings will be advanced to the water table or to a total depth consistent with previous explorations, depending on the media being sampled in the area of investigation. Soil borings will be used for soil and/or groundwater grab sampling. Borings will be decommissioned according to the Minimum Standards for Construction and Maintenance of wells (WAC 173-160-460) immediately after sampling (Section 2.3).

All borings will be completed by a driller licensed in the State of Washington and will be monitored by an environmental professional. Prior to initiation of drilling or any other intrusive subsurface activity, any available utility maps provided by Boeing will be reviewed to identify major utilities in the vicinity of the proposed exploration locations. Additionally, a public utility locate service will be contacted to confirm the location of and identify other underground utilities in the vicinity of the proposed locations. The final location for each boring will be selected based on the findings of the utility locating and map review. The Boeing Onsite Activities Representative (OAR) will review the boring locations relative to the utility clearance information and sign a Boeing Pre-Dig Utility Clearance Checklist prior to drilling. Before and between drilling of each boring and at the completion of the project, downhole drilling equipment will be cleaned, as described in Section 9.0.

During drilling, continuous soil samples will be collected at all soil boring locations to classify soil lithology in accordance with the Unified Soil Classification System (USCS). Soil samples will be collected using a closed-piston sampling device with a 48-inch-long, 1.5-inch-diameter core sampler. A record of the soil and groundwater conditions observed during drilling will be recorded on a Log of Exploration form. Example forms are provided in the quality assurance project plan (QAPP; Appendix B of the RI work plan). The log of exploration (i.e., boring log) will also show soil types, evidence of contamination based on field screening, and other pertinent information. Discrete soil grab samples will be collected at soil borings in select investigation areas at several depths and sent to a laboratory for analysis. Sample descriptions and other relevant information will be recorded on a sample collection form.

2.1 Field Screening

Soil and groundwater will be field-screened for evidence of environmental impact. Field-screening techniques may include visually inspecting the soil or groundwater for staining, discoloration, and other evidence of environmental impact. Field screening will be conducted at all exploration locations on all media. Volatile organic compound (VOC) monitoring for soil will be conducted using headspace analysis and will be performed by first measuring VOC levels along the length of freshly exposed soil in recovered soil cores using a photoionization detector (PID). If VOC readings above background levels are observed, a small amount of soil from that portion of the soil core yielding the VOCs will be placed in a Ziploc® bag. The bag will then be sealed, the contents broken up, and the bag allowed to equilibrate for 2–5 minutes. Tubing will be attached to the PID and inserted into the Ziploc bag. The

bag will be resealed around the tube and the highest reading measured by the PID will be recorded and entered in the comments section of the soil boring logs. Additionally, any PID readings of more than 5 parts per million (ppm) will be noted on the chain-of-custody form to communicate the potential need for dilution to the laboratory; 5 ppm is the threshold as readings below 5 ppm are commonly caused by interference.

If field screening of a soil sample boring indicates the potential presence of contaminants of concern (COCs) at an interval not specified for sampling in the RI work plan, an additional soil sample will be collected at that interval for analysis, and a record of the depth(s) of the soil sample will be recorded. Groundwater samples will be observed for evidence of sheen, odor, and discoloration; observations will be recorded on the appropriate form. Example forms are provided in the QAPP (Appendix B of the RI work plan).

2.2 Soil Sampling

This section discusses soil sampling methodology. Please refer to Section 6.0 of the RI work plan for a discussion of soil sampling locations, sampling intervals, and analytical methods. Sample containers, labeling, and handling methods are discussed below.

Soil samples to be tested for non-volatile parameters (i.e., metals, polychlorinated biphenyls [PCBs], and diesel- and oil-range total petroleum hydrocarbons [TPH]) will be collected from the identified soil sampling intervals using the following methods:

- Scrape the outside of the soil core to expose a fresh sampling surface using a clean, decontaminated stainless steel spoon.
- Using a new, stainless steel spoon, collect soil from the desired interval that did not contact the sides of the tooling/core container.
- Homogenize the soil in a decontaminated stainless-steel bowl using the stainless-steel spoon.
- Transfer the homogenized soil into the appropriate laboratory-supplied sample containers, which includes the extra container(s) for the PCB split sample (see Section 4.0). No special sampling procedures or equipment are necessary for PCB soil sampling.
- Immediately place all sample containers in a pre-chilled cooler and provide PCB split sample container(s) and chain-of-custody form to Ecology representative overseeing sampling.
- If used for collection of samples for analysis by US Environmental Protection Agency (EPA) Method 1668C, collect a rinsate blank from stainless-steel bowl and stainless-steel spoon following decontamination (Section 10.2). Rinse decontaminated sampling tools with purified deionized water from the laboratory and collect samples of the rinse water for analysis by EPA Method 1668C. One rinsate blank will be collected at each sampling location (i.e., each boring), per the QAPP (Appendix B of the RI work plan).

Soil samples collected for analysis for volatile parameters (e.g., gasoline-range TPH and any VOCs including benzene, toluene, ethylbenzene, and xylenes) will be collected in accordance with EPA

Method 5035A. The EPA 5035A soil sampling method is intended to reduce volatilization and biodegradation of samples. The EPA 5035A procedure for soil sample collection is as follows:

- Collect soil samples as soon as possible after the polyethylene sleeve is cut open. Collect the sample using a coring device (i.e., EnCore® sampler, EasyDraw Syringe®, or a Terra Core™ sampling device). Each sample will consist of three, approximately 5-gram, samples from each depth interval sampled.
- Remove excess soil from the coring device. If an EasyDraw Syringe or Terra Core sampling device is used for sample collection, then place the "cored" soil directly into three, pre-weighed (by the analytical lab), preserved 40 milliliter (mL) vials with a stirbar. Vials will be preserved as indicated in Table A-2. If the EnCore sampler is used, then close the sampler for transport to the laboratory.
- Collect 2 ounces of soil and place in a laboratory-supplied jar for moisture content analysis and laboratory screening purposes. Fill the jar to minimize headspace.

Soil samples collected for laboratory analysis will be documented on a sample collection form. Samples collected in SWMU-43 will be labeled using the following format:

"DA(Drainage area #)-(ID #)-(depth interval range ')"

Samples collected in all other investigation areas will be labeled using the following format:

"(Area location prefix)-RISB-(ID #)-(depth interval range ')"

For example, a soil sample collected between 7 and 10 feet (ft) below ground surface (bgs) at RISB-1 in AOC-01/02 would be A0102-RISB-1-(7-10'). A soil sample collected between 7 and 10 ft bgs at DA01-1 in Drainage Area 1 of SWMU-43 would be DA01-1-(7-10').

2.3 Groundwater Grab Sampling

This section discusses groundwater grab sampling methodology. Please refer to Section 6.0 of the RI work plan for a discussion of groundwater grab sampling locations and analytical methods. Sample containers, labeling, and handling methods are discussed below.

Groundwater grab samples will be collected in SWMU-20, SWMU-43, and the Museum of Flight; a total of 22 direct-push borings will be sampled for laboratory analysis, as presented in Table A-1. The groundwater samples will be collected using a groundwater sampler consisting of a 4-ft-long, wire-wrapped, stainless-steel screen (0.010-inch slot size) with a retractable protective steel sheath. The groundwater sampler will be advanced to the sample depth and the protective sheath will be retracted to expose the stainless-steel screen to the formation. Based on field conditions, temporary well points may be constructed with polyvinyl chloride (PVC) screens in the boreholes and used for sample collection; temporary well points will be removed and decommissioned after sampling. Low-flow purging and sample collection will generally be conducted in accordance with procedures described in Section 3.3 of this SAP, with the following exceptions:

- Per the EPA procedure for developing and sampling from temporary wells, peristaltic pumps will be used for groundwater grab sampling from soil borings instead of bladder pumps.[1] Grab samples from soil borings can be much more turbid than samples collected from highly developed monitoring wells; peristaltic pumps are much more effective at reducing turbidity, as these pumps are able to pull water at a higher flow rate. Additionally, the small diameter of direct-push groundwater sampling tooling prevents the use bladder pumps.
- A time limit of 20 minutes will be set for monitoring field parameters during purging prior to sampling groundwater from temporary wells. Purging is typically considered to be complete when all field parameters become stable for three successive readings. This can take longer for grab samples, as the temporary well is not developed using traditional methods and the groundwater in the boring is not at equilibrium with the surrounding aquifer material. Per the EPA groundwater sampling procedure, "the longer a temporary well is in place and not sampled, the more stagnant the water column becomes and the more appropriate it becomes to apply standard permanent monitoring well purging criteria to achieve representative aquifer conditions in the sample." The sample will no longer be considered a grab sample if purging continues for too long in a temporary well.

The groundwater grab samples collected from SWMU-43 soil borings will be labeled using the following format:

"DA(Drainage area #)-(ID #)-GW(depth interval range ')"

Grab samples collected from soil borings in all other investigation areas will be labeled using the following format:

"(Area Location prefix)-RISB-(ID #)-GW(depth interval range')"

For example, a groundwater grab sample collected at RISB-11 in SWMU-20 would be SWMU20-RISB-11-GW(12-16'). A groundwater grab sampled collected at DA14-1 in Drainage Area 14 of SWMU-43 would be DA14-1-GW(12-16').

Following sample collection, immediately place all sample containers in a pre-chilled cooler and provide PCB split sample container(s) and chain-of-custody form to the Ecology representative overseeing sampling (see Section 4.0).

As some of the groundwater grab sampling locations are located in close proximity to the Lower Duwamish Waterway (LDW), there is a potential for the locations to be within the surface water/groundwater transition zone. The Washington State Department of Ecology (Ecology) has concerns that groundwater sampled within this zone will be diluted by the surface water and not representative of localized contamination. The location of the transition zone has not been evaluated at the DC, so it will be evaluated based on data collected during the RI. Field parameters (i.e., conductivity, pH, etc.) collected during groundwater sampling will be compared to available data at

[1] EPA. 2017. Operating Procedure: Groundwater Sampling. Procedure No. SESDPROC-301-R4. Region 4, US Environmental Protection Agency, Science and Ecosystem Support Division. April 26.

wells located in the center of the site to evaluate how far inland the transitional zone extends. Conductivity, as an indicator of salinity, is of particular interest, as it will indicate if the groundwater sampled is fresh, brackish, or salt water. Conductivity values for freshwater, brackish water, and sea water are as follows:[2]

- Freshwater = 0–1,000 microsiemens per centimeter (µS/cm)
- Brackish water = 1,000–46,000 µS/cm
- Sea water = 46,000–72,000 µS/cm.

If the conductivity of a groundwater sample collected along the LDW is within the freshwater range listed above or is comparable to the average conductivity measured at an upgradient monitoring well, then samples will be considered undiluted. This data will be used to inform future locations of any additional groundwater sampling or monitoring well installation, as required.

2.4 Boring Decommissioning

Following soil and groundwater sample collection, all borings will be decommissioned according to Washington State regulations for resource protection wells (Section 173-160-460 WAC). Per the code, each soil boring not completed as a monitoring well will be decommissioned by sealing the boring from the bottom to land surface using bentonite chips, bentonite slurry, neat cement grout, or neat cement. Material used for sealing the boring below the water table will be placed from the bottom up using methods that avoid segregation or dilution of the sealing material. Application methods include dump bailers and a tremie tube. Above the water table, material can be hand-poured into the boring as the casing is being raised.

The ground surface will be returned to its original condition, or better, after decommissioning soil borings that were not completed as monitoring wells. Asphalt and cement will be patched to cover the bentonite (or other material) seal. Vegetation will be replanted, if necessary, and groundcover will be restored by raking, or other physical means. If working in a landscaped area, efforts will be made to disrupt existing conditions as little as possible during drilling so restoration work is minimal.

2.5 Ground Surface Elevation Survey

Groundwater elevation data will be collected for new sample locations as part of the RI. Depth to water will be measured at time of drilling (ATD) of soil borings for soil sampling and groundwater grab sampling. The difference between the ground surface elevation of the soil boring and the depth to water at that location is the groundwater elevation.

[2] Sensorex. 2017. "Making Sense of Conductivity, TDS, and Concentration in Water Treatment." Sensorex, Inc. November 9. https://sensorex.com/blog/2017/11/09/electrical-conductivity-of-water/.

The ground surface elevation and geographic location of all new subsurface explorations during the RI will be surveyed as soon as possible following drilling. Services will be provided by a licensed land surveying firm.

3.0 MONITORING WELL INSTALLATION, DEVELOPMENT, AND SAMPLING

Procedures for installing and developing monitoring wells and collecting groundwater samples from the monitoring wells are described below. No new permanent monitoring wells are currently planned for the RI. Data collected from temporary groundwater and soil locations will be evaluated to determine if monitoring well installation is necessary.

3.1 Installation and Construction of Monitoring Wells

Boreholes for groundwater monitoring wells, if installed, will be drilled using direct-push, hollow stem auger, or rotosonic drilling equipment. Drilling, field screening, soil sampling, and soil logging procedures are described in Section 2.0. Monitoring wells will be constructed by a Washington-licensed drilling contractor, in accordance with the Minimum Standards for Construction and Maintenance of Wells (Chapter 173-160 WAC). Oversight of drilling and well installation activities will be conducted by an environmental professional familiar with environmental sampling and construction of resource protection wells. Soil boring information will be recorded on a Log of Exploration form during drilling, and monitoring well construction details will be recorded on an As-Built Well Completion form. Example forms are provided in the QAPP (Appendix B of the RI work plan).

Because the DC facility boundary along the LDW is tidally influenced, if monitoring wells are to be installed in close proximity to the LDW, they must be installed at a depth such that that sampling can occur at low tide (i.e., do not go dry) and so that saline water from the underlying salt water wedge is not encountered during sampling (not installed in the saltwater/freshwater transition zone). As a result, monitoring wells will not be installed until Boeing and Ecology agree on the approximate top depth and horizontal extent of the transition zone.

Monitoring wells will be constructed with 2-inch-diameter, flush-threaded, Schedule 40 PVC pipe. Well screen lengths may vary depending on installation location conditions, but well screen material will be Schedule 40 PVC with 0.010- or 0.020-inch slots. A filter pack material consisting of pre-washed, pre-sized number 12-20 silica sand (or equivalent) will be placed from the bottom of the well to between 1 and 2 ft above the top of the screen. Filter pack material will be placed slowly and carefully to avoid bridging of material. Well construction details are presented on Figure A-2.

A bentonite seal will be placed above the filter sand pack material to within approximately 3 ft of ground surface (Figure A-2). The seal will consist of bentonite chips. Concrete will be used to backfill the boring to the subgrade for placement of the protective cover. The wells will be completed with either aboveground or flush-mounted protective casings depending on installation location.

The well names and the identification numbers assigned by Ecology will be marked on the well identification tags supplied by Ecology. The tags will be attached to each well casing (inside the well

monument) following well installation. Ecology tag numbers must be recorded on the As-Built Well Completion form. An example form is provided in the QAPP (Appendix B of the RI work plan).

3.2 New Well Development and Existing Well Redevelopment

Redevelopment of existing monitoring wells at the DC will be performed prior to sampling for the RI if the monitoring well has not been sampled in the last 5 years. Development of monitoring wells installed at part of this RI will follow this development process no sooner than 72 hours after installation to allow the bentonite seal material to fully hydrate.

Development will be achieved by repeatedly surging the well with a surge block and purging the well at a high flow rate with a Honda or battery-operated submersible pump until the water runs clear or at least 10 well casing volumes have been removed, whichever comes first. During development, the purged groundwater will be monitored for turbidity. "Clear" for the purposes of well development means that the turbidity of purged groundwater decreases to 5 nephelometric turbidity units (NTU). If the well dewaters (i.e., runs dry) during the initial surging and purging effort, one final well casing volume will be removed after the well has fully recharged, if practicable. Well development activities will be recorded on a Well Development form. An example form is provided in the QAPP (Appendix B of the RI work plan).

During a site reconnaissance in September 2019, the presence and condition of existing monitoring wells in areas not regularly sampled (i.e., not in AOC-05, SWMU-17, or SWMU-20) was investigated based on the most recent site figures available. Monitoring wells on the Museum of Flight property were not located during site reconnaissance. Existing monitoring wells were observed in AOC-01/02. These wells have not been sampled since 2002 but are still in suitable condition for sampling (i.e., monument and lid remains in-tact, casing appears undamaged, etc.). The sampling of AOC-01/02 wells is proposed as part of the RI; these wells will be redeveloped prior to sampling according to the procedures described above.

3.3 Monitoring Well Groundwater Sample Collection

Groundwater samples will be collected from monitoring wells at least 48 hours after well development. Water levels will be measured prior to sample collection. Groundwater samples will be collected at each monitoring well using low-flow sampling techniques and the following procedures:

- Immediately following removal of each well monument cover, the well head will be observed for damage, leakage, and staining. Additionally, immediately following removal of the well head cap, any odors will be documented, and the condition of the well opening will be observed. Any damage, leakage, or staining to the well head or well opening will be documented on the sample collection form. An example form is provided in the QAPP (Appendix B of the RI work plan).
- The depth to groundwater will be measured from the north side of the top of the casing prior to extraction of water from the well.

- Prior to sampling, each well will be purged using a non-dedicated bladder pump that is attached to dedicated purge and sample collection tubing made of low-density polyethylene (LDPE). The well will be purged at less than 0.5 liters per minute (L/min) and with drawdown of less than 4 inches (0.3 ft) during purging. Purging will continue until temperature, conductivity, pH, dissolved oxygen (DO), oxidation reduction potential (ORP), and turbidity have stabilized, as described below.
- Field parameters, including pH, temperature, conductivity, DO, ORP, and turbidity, will be continuously monitored during purging using a flow cell. Purging of the well will be considered to be complete when all field parameters become stable for three successive readings. The three successive readings should be within +/- 3 percent for temperature, +/- 3 percent for conductivity, +/- 10 percent for DO, +/- 10 millivolts (mV) for ORP, and +/- 10 percent for turbidity.
- Purge data will be recorded on a sample collection form including purge volume; time of commencement and termination of purging; any observations regarding color, turbidity, or other factors that may have been important in evaluating sample quality; and field measurements of pH, conductivity, temperature, DO, and turbidity.
- Following the stabilization of field parameters, the flow cell will be disconnected, and groundwater samples will be collected. Sample data will be recorded on a sample collection form, including sample number and time collected, the observed physical characteristics of the sample (e.g., color, turbidity, odor, and sheen), and field parameters (pH, conductivity, temperature, DO, and turbidity).
- Any problems or significant observations will be noted in the “comments” section of the sample collection form.
- Groundwater samples will be collected directly into the appropriate sample containers using the same pump used for purging. To prevent degassing during sampling for VOCs, a pumping rate will be maintained below 100 milliliters per minute (mL/min). The VOC containers will be filled completely so that no head space remains. Samples will be chilled to < 6 degrees Celsius (°C) immediately after collection. Clean gloves will be worn when collecting each sample.
- Groundwater for dissolved metals analyses will be collected last and field-filtered through a 0.45-micron, in-line disposable filter. Groundwater samples for dissolved metals analysis will be preserved, as specified in Table A-2. A note will be made on the sample label, sample collection form, and chain-of-custody form to indicate the sample has been field-filtered.
- Between filling sample containers for petroleum/VOC compounds and metals, the discharge tubing will be reconnected to the flow cell and, after a sufficient volume of water has been purged, replicate groundwater parameter measurements will be recorded on the sample collection form. The purpose of replicate parameter measurements during sample collection is to confirm that groundwater conditions did not significantly change during the act of sampling. If groundwater conditions did change during the filling of containers beyond the stability thresholds discussed above, inform the project manager, continue purging the well, and recollect the samples.

Initial sampling at monitoring wells will be performed with non-dedicated bladder pumps with dedicated bladders and tubing. If subsequent monitoring is required, dedicated bladder pumps will be evaluated for all new wells.

Groundwater samples collected from monitoring wells for laboratory analysis will be labeled using the following format:

"(Well ID #)-YYMMDD"

For example, a groundwater sample collected at MW-8C on October 5, 2020 would be MW8C-201005.

4.0 SPLIT SAMPLE COLLECTION

At the request of Ecology, split samples will be collected by LAI at specific locations under investigation for PCBs. Groundwater and soil samples submitted by LAI for analysis for PCBs will be analyzed for PCB Aroclors by EPA Method 8082A. Depending on the media, the split sample may be analyzed by Ecology, as follows:

- Groundwater sample, monitoring well (BDC-05-05 in SWMU-16) – EPA Method 1668C
- Groundwater sample, direct-push borings (SWMU-43) – EPA Method 8082A
- Soil sample, direct-push borings (SWMU-16 and SWMU-43) – EPA Method 1668C.

The procedure for collection of soil split samples from direct-push borings are as outlined in Section 2.2 of this SAP. There are no special sampling requirements for collecting the Ecology split sample to be held and potentially analyzed by EPA Method 1668C. Similarly, the procedure for collection of groundwater samples from direct-push borings to be analyzed by EPA 8082A are as outlined in Section 2.3 and require no special modification.

As the analytical method for EPA Method 1668C in groundwater has a very low detection limit, the procedure for collection of groundwater split samples from monitoring wells will be adapted per recommended sampling guidelines for PCB Congeners.[3,4] The procedure will be generally as detailed in Section 3.3, but with modifications to minimize the potential for tubing materials to contaminate the groundwater samples with PCB Congeners at low levels. At groundwater monitoring wells sampled for PCB split samples, the modified procedure will be as follows:

- Use a peristaltic pump for PCB sampling.
- Assemble new sample tubing for PCB sampling:
    - Thin-walled flexible copper tubing (0.25-inch outer diameter) for down the well and for sample collection.
    - Platinum-cured silicon tubing through the peristaltic pump.
- Collect source blank sample of purified deionized water from the laboratory for analysis of PCB Congeners by EPA Method 1668C.
- Pump purified deionized water (minimum of 1 liter) from the laboratory through the new sample tubing for PCB sampling before insertion into the well. Collect equipment blank sample from the container of purified deionized water that has passed through the PCB sample tubing for analysis of PCB Congeners by EPA Method 1668C.
- Insert copper tubing into well. Purge groundwater from the well using the peristaltic pump and copper tubing until field parameters have stabilized according to the limits presented in Section 3.3.

[3] Leidos. 2016. Technical Memorandum: Potential for PCB Contamination from Sampling Equipment Tubing Materials. Leidos, Inc. November 23.

[4] Leidos. 2017. Data Report: Lower Duwamish Waterway, Groundwater Sampling for PCB Congeners and Aroclors. Leidos, Inc. July.

- Once field parameters have stabilized and all necessary information has been recorded on the sample collection form (see Section 3.3), fill two, laboratory-provided, 1-liter containers.
- Divide the contents of the two 1-liter containers evenly between the containers necessary for PCB split samples (i.e., for analysis by EPA Method 8082A and EPA Method 1668C).
- Remove copper tubing from the well. Prepare new LDPE sample tubing and assemble non-dedicated bladder pump using a new disposable bladder and decontaminated pump assembly.
- Purge additional groundwater from the well to confirm groundwater parameter stabilization prior to collecting the non-PCB sample(s).
- Sample for all non-PCB analytes at the sampling location according to the procedure detailed in Section 3.3.

For both soil and groundwater split samples, the quantity of containers required for the sampling of PCB Aroclors by EPA Method 8082A, per Table A-2, will be doubled. All containers for the split samples will have identical sample names and labels. Once collected, one set of containers will remain with LAI for analysis by the laboratory listed in Table A-2. The second set of containers and a chain-of-custody form will be provided to an Ecology representative overseeing the sampling. Proper handling, preservation, and analysis of the split and quality assurance/quality control (QA/QC) samples, as well as appropriate level of validation of the resulting data will be the responsibility of Ecology once in its custody.

5.0 GROUNDWATER SEEP RECONNAISSANCE AND SAMPLING

Seep location reconnaissance and sampling was performed along the LDW in 2018. Seven seeps were identified (SP-24, SP-26, SP-27, SP-28, SP-33, SP-35, and SP-37) along the shoreline of the DC during the reconnaissance (Figure A-1). Sampling at all seven groundwater seeps will be attempted in order to determine if potential COCs in site groundwater are reaching the LDW at concentrations of concern.

Before sampling, a reconnaissance will be performed during daytime low tides to evaluate known groundwater seeps and identify new seeps, if present, along the LDW. Notes of past reconnaissance observations and field measurements will be utilized to find the previous seven seep locations, if possible. New, distinctly different groundwater seeps, if present, will also be identified and sampled. Location, accessibility, flow rate, and conductivity of seeps will be evaluated during the reconnaissance to select those seeps that represent discharge of shallow DC groundwater to the LDW. Only freshwater seeps will be sampled, and conductivity will be used as a proxy for determining seep salinity (see Section 2.3 for ranges).

In addition to conductivity, field measurements during the reconnaissance will also include temperature, pH, DO, ORP, and turbidity. Seep water will be collected in a glass beaker; water quality parameters will be measured in the field using a probe placed into the beaker. The global positioning system (GPS) location of each seep will be recorded and a stake will be used to mark each seep in the field. Seep survey observations and measurements will be recorded on a seep reconnaissance survey form. An example of this form is provided in the QAPP (Appendix B of the RI work plan). At least two photographs will be taken of each seep.

Results of the reconnaissance will determine which seeps are sampled for the RI and what approximate tidal elevation is appropriate for sampling. Approximate seep elevations will be determined by measuring from the LDW elevation to the portion of the seep that visually has the highest flow rate using a hand-held sight level and the known elevation of the LDW. Seep samples will be collected using decontaminated stainless-steel drive-point screens in order to minimize turbidity. The 14-inch-long drive-point screens will be driven by hand into the seep to a depth of 0.5–1 ft bgs. Prior to sampling, water will be purged from the drive-point "mini temporary wells" with a peristaltic pump until the water is visibly clear. During purging, water quality parameters, including temperature, conductivity, pH, DO, ORP, and turbidity, will be recorded using a multi-parameter water quality meter and entered on a sample collection form. An example of this form is provided in the QAPP (Appendix B of the RI work plan). Photographs of each seep sampling setup will be taken. Salinity values will be calculated from the measured conductivity and temperature.

Groundwater seep samples collected from any of the seven previously sampled seeps will use their location identifier (SP-24, SP-26, SP-27, SP‑28, SP-33, SP-35, SP-37) in place of the "ID #" shown in the following format:

"BDC-(ID #)-YYMMDD"

For example, a seep sample collected at SP-24 on October 5, 2020 would be BDC-SP-24-201005.

If necessary, groundwater seep samples collected from newly identified locations will have location identifiers starting with “RISP-01” and follow the above format for a sample name of BDC-RISP-01-201005.

6.0 BANK EROSION RECONNAISSANCE AND SAMPLING

During the seep sampling reconnaissance along the LDW, shoreline bank area on property owned by Boeing between the 9-120 building and the 9-140 building (Figures 3 and 23 of the RI work plan) will be observed and documented for signs of soil erosion. Documentation will include photographs, descriptions of the bank materials and signs of erosion (bank unravelling, collapse, etc.), and schematic cross-sections of the bank, if necessary.

If bank erosion is observed, soil samples will be collected at a frequency of one discrete sample per 20 ft of relatively continuous bank erosion observed. For example, a 30-ft long area of continuous bank erosion would have two discrete samples collected approximately 20 ft apart. Discrete bank erosion samples will be analyzed for gasoline-range TPH (TPH-G), diesel- and oil-range TPH (TPH-D/O), VOCs, PCBs, polycyclic aromatic hydrocarbons (PAHs) and total metals as outlined in Table A-1 and identified in the following format:

"BE-(ID #)-YYMMDD"

For example, a bank soil sample collected at BE-1 on October 5, 2020 would be BE-1-201005.

7.0 LABORATORY ANALYSIS FOR SOIL AND GROUNDWATER

Soil samples will be selectively analyzed for one or more of the following:

- Gasoline-range TPH (NWTPH-Gx)
- Diesel- and oil-range TPH (NWTPH-Dx)
- Total metals (SW-846 6010C)
- VOCs (SW-846 8260D)
- PCB Aroclors (SW-846 8082A)
- PAHs (SW-846 8270E-SIM).

Groundwater samples will be selectively analyzed for the following:

- Gasoline-range TPH (NWTPH-Gx)
- Diesel- and oil-range TPH (NWTPH-Dx)
- Total/dissolved metals (SW-846 6010C)
- Total/dissolved mercury (SW-846 7471B)
- VOCs (SW-846 8260D)
- PAHs (SW-846 8270E-SIM)
- PCB Aroclors (SW-846 8082A).

Specific analyses vary by sample location; a summary of the analyses by area is provided in Table 4 of the RI work plan. Analytical methods, sample containers, holding times, the laboratory performing each analysis are summarized in Table A-2 of this SAP and in Table B-4 of the QAPP (Appendix B of the RI work plan).

8.0 QUALITY ASSURANCE AND QUALITY CONTROL

Analytical samples collected during the RI will follow QA/QC procedures and standards outlined in the QAPP (Appendix B of the RI work plan). Field QA/QC includes the collection of QC samples consisting of blind field duplicate samples, matrix spike and matrix spike duplicate samples, trip blanks, and equipment and source deionized water blanks, as discussed in Section 4.0. The procedures for collection of the QC samples are provided in the QAPP (Appendix B of the RI work plan). Sample containers, preservatives, and holding times for each chemical analysis are provided in Table A-2 of this report and in Table B-4 of the QAPP.

8.1 QC Sample Nomenclature

The following nomenclature will be used to label and identify field QC samples collected during the RI:

- Field duplicates for groundwater samples: “GWDUP-(Duplicate)-YYMMDD”
    - For example, if the first groundwater field duplicate sample was collected on July 17, 2021, it would be GWDUP-1-210717, the second groundwater field duplicate sample collected would be GWDUP-2-210717, and so on.
- Field duplicates for soil samples: “SDUP-(Duplicate #)-YYMMDD”
    - For example, if the first soil field duplicate sample was collected on July 17, 2021 it would be SDUP-1-210717, the second soil field duplicate sample collected would be SDUP-2-210717, and so on.
- Matrix spike and matrix spike duplicates: Labeled with the same sample name and format as the primary sample
- Trip blanks: Labeled by the laboratory that provided them
- Source blanks: “SourceBlank-(Lab)-YYMMDD”
    - For example, a source blank of deionized water provided by Analytical Resources, Inc. laboratory in Tukwila, Washington collected for analysis on July 17, 2021 would be labeled SourceBlank-ARI-210717.
- Equipment blanks: “RinsateBlank-(Identifier)”
    - For equipment blanks collected for a specific sample, the identifier will be the corresponding sample name.
    - For equipment blanks collected for a specific piece of equipment, the identifier will be the type of equipment (e.g., bowl, sample tubing, non-dedicated bladder pump assembly) and the date in YYMMDD format. A rinsate sample collected from a bowl collected on July 17, 2021 would be RinsateBlank-bowl-210717.

8.2 Equipment Calibration

All field parameter meters will be calibrated daily before use; the results of the calibration will be recorded in a calibration log specific to the meter being used and stored with the meter at all times. Meters will be recalibrated if any anomalous readings are observed. If recalibration does not

adequately resolve the anomalous readings, the meter will be replaced prior to collection of additional samples.

9.0 DATA AND RECORDS MANAGEMENT

All field documentation, including the various data collection forms discussed in this SAP, survey information, and field notes, will be reviewed for completeness and accuracy, scanned, and stored electronically on a backed-up server. Hard copies will be retained in the project files for a minimum of 1 year.

All laboratory analytical data generated under this SAP will be submitted to the Ecology project manager in both printed and electronic formats. Data will also be submitted through Ecology's Environmental Information Management System (EIM) in accordance with WAC 173-340-840(5) and Ecology's Toxics Cleanup Program Policy 840: Data Submittal Requirements.

10.0 EQUIPMENT DECONTAMINATION

The decontamination procedures described below are to be used by field personnel to clean drilling, sampling, and related field equipment. Deviation from these procedures must be documented in field records.

10.1 Water Level Indicator

The tape from the water level indicator will be rinsed with Alconox® soap, tap water, and de-ionized water between each well measurement.

10.2 Sampling Equipment

All sampling equipment used (e.g., stainless steel bowls, stainless steel spoons, soil split-spoon samplers, etc.) will be cleaned using a three-step process, as follows:

1. Scrub surfaces of equipment that would be in contact with the sample with brushes using an Alconox and water solution.
2. Rinse and scrub equipment with clean tap water.
3. Rinse equipment a final time with de-ionized water to remove tap water impurities.
4. Collect rinsate blank samples, as appropriate.

Decontamination of reusable sampling devices (i.e., stainless steel drive-point screens, etc.) will occur between each sample collection and will follow the above steps. At least 5 gallons of each decontamination liquid will be pumped through any non-dedicated pump systems or sampling equipment that cannot be fully disassembled.

10.3 Heavy Equipment

Heavy equipment (i.e., drilling equipment that is used downhole, or that contacts material and equipment going downhole) will be cleaned by a hot water, high-pressure wash before each use and at completion of the project. Potable tap water will be used as the cleaning agent.

11.0 RESIDUAL WASTE MANAGEMENT

Investigation-derived waste (IDW), including soil cuttings and water generated during drilling and sampling, and waste/wastewater generated during decontamination of sampling equipment or devices, will be collected and managed in containers provided by Boeing. All waste will be characterized in accordance with applicable regulations based on the laboratory analytical results and historical knowledge. All IDW will be disposed of at facilities approved by Boeing and in accordance with applicable regulations.

12.0 USE OF THIS SAMPLING AND ANALYSIS PLAN

This Sampling and Analysis Plan has been prepared for the exclusive use of The Boeing Company and applicable regulatory agencies for specific application to the Boeing Developmental Center facility in Tukwila, Washington. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by LAI, shall be at the user's sole risk. LAI 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.

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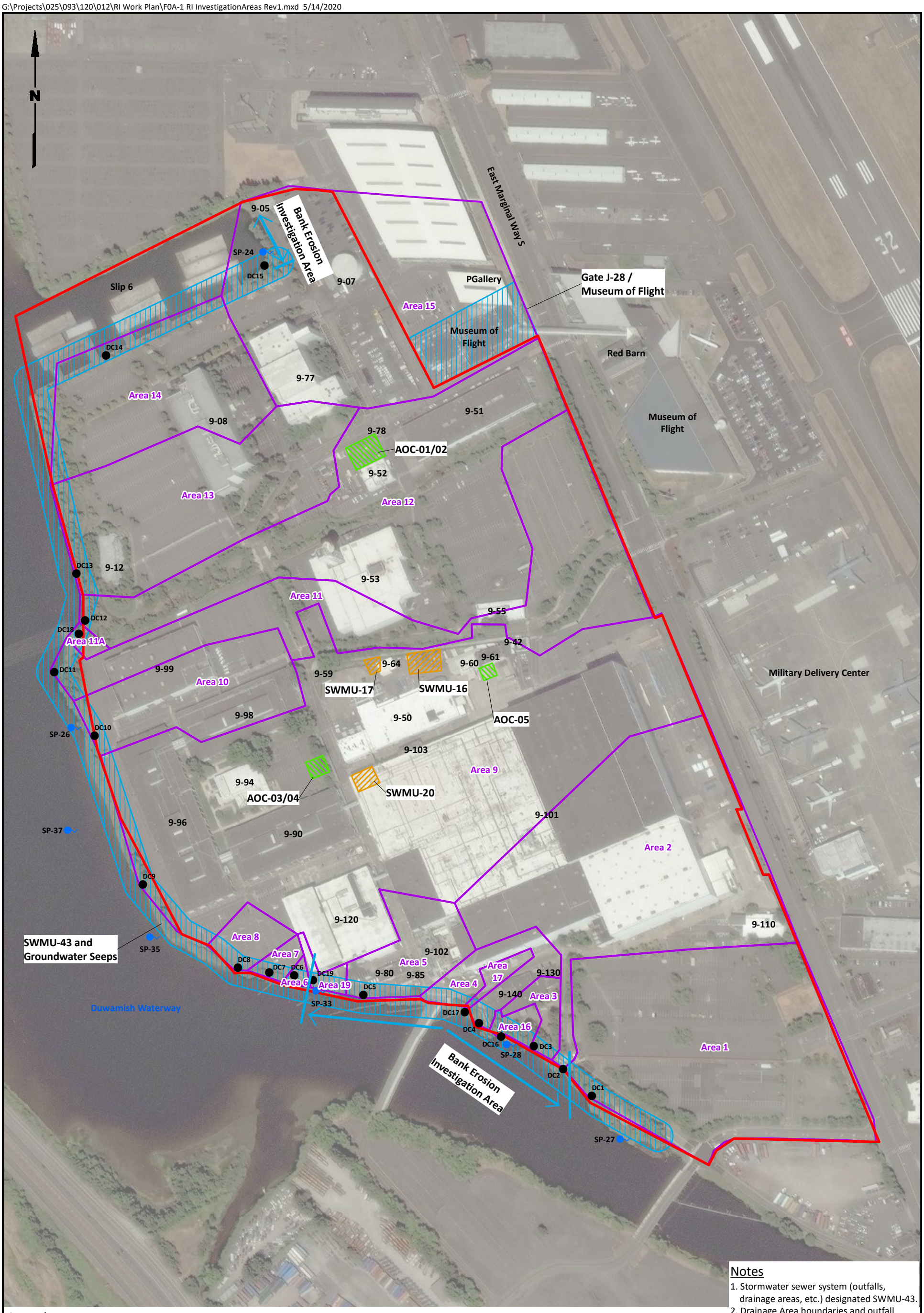

Legend

- Known Seep Location
- Outfall
- AOCs
- SWMUs
- Other Investigation Areas
- Drainage Areas
- Facility Boundary

0 300 600

Scale in Feet

Notes

1. Stormwater sewer system (outfalls, drainage areas, etc.) designated SWMU-43.
2. Drainage Area boundaries and outfall locations are subject to change due to planned modifications required for stormwater treatment.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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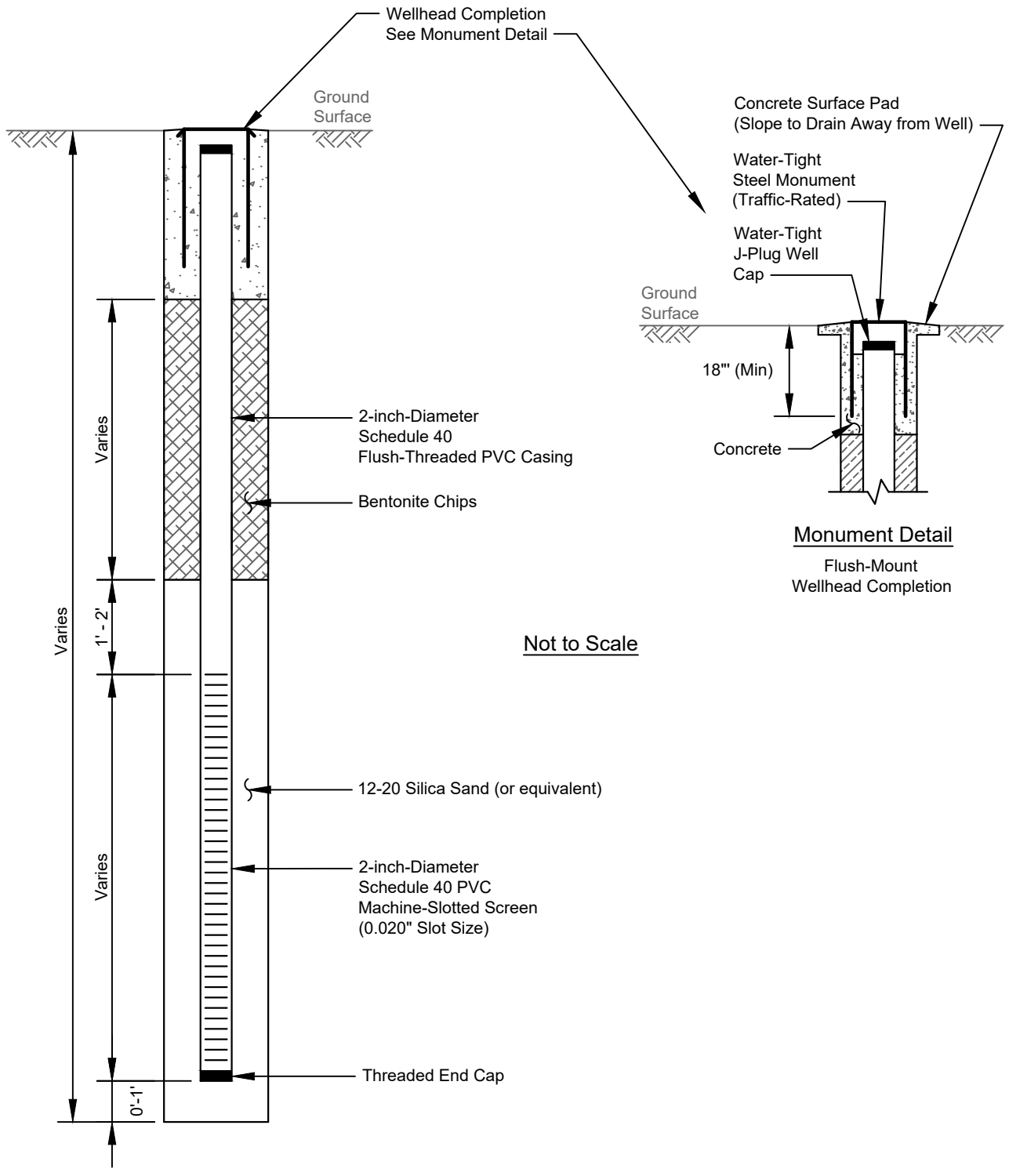
Data Sources: Boeing; Esri World Imagery.

Boeing Developmental Center
Tukwila, Washington

Boeing Facility and RI Investigation Areas

Figure A-1



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LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

Monitoring Well Construction Detail

Figure
A-2

Table A-1
Summary of Proposed Sampling and Analyses
Sampling and Analysis Plan
Boeing Developmental Center
Tukwila, Washington

	GROUNDWATER SAMPLING										SOIL SAMPLING								
	Sample Count (c)										Sample Count (d)								
Investigation Area	TPH, diesel- and oil-range (NWTPH-Dx) (a)	TPH, gasoline-range (NWTPH-Gx) (a)	VOCs (8260C)	PCB Aroclors (8082A)	PAHs (8270E-SIM)	Total/dissolved metals (6010C) (b)	Total/dissolved mercury (7471B) (b)	Sampling Scope	Sample Location ID(s)	Screened Interval (bgs)	TPH, diesel- and oil-range (NWTPH-Dx) (a)	TPH, gasoline-range (NWTPH-Gx) (a)	VOCs (8260C)	PCB Aroclors (8082A)	PAHs (8270E-SIM)	Total metals (6010C)	Sampling Scope	Sample Location ID(s)	Sampling Intervals (bgs)
AOC-01/02	3	3	3			3	3	Three existing wells	DC-9-52-1, DC-9-52-2, DC-52-3 (existing)	None	6	6	6				Two soil borings	RISB-1, RISB-2	(7-10') (10-13') (13-16')
AOC-03/04	2							Two existing wells	MW-21A, MW-21C (existing)	None	6						Two soil borings	RISB-3, RISB-4	(7-10') (10-13') (13-16')
AOC-05								None	None	None		6	6				Two soil borings	RISB-5, RISB-6	(7-10') (10-13') (13-16')
SWMU-16			1	1	1	1		One existing well (e)	BDC-05-05 (existing)	None			10	10	10	10	Two soil borings (g)	RISB-7, RISB-8	(WT-3') (3-6') (6-9') (9-12') (12-15') below WT
SWMU-17								None	None	None	6	6	6			6	Two soil borings	RISB-9, RISB-10	(7-10') (10-13') (13-16')
SWMU-20					7			Four new grabs, three existing wells	RISB-11, RISB-12, RISB-13, RISB-14 (grabs) MW-8C, MW-15A, MW-22A (existing)	~12-16' (grab)			24				Four soil borings	RISB-11, RISB-12, RISB-13, RISB-14	(7-10') (10-13') (13-16') (16-19') (19-22') (22-25')
SWMU-43	15	15	15	15	15	15	15	Fifteen new grabs (f)	DA01-1, DA02-1, DA03-1, DA04-1, DA05-1, DA09-1, DA10-1, DA11-1, DA11-2, DA12-1, DA12-2, DA13-1, DA14-1, DA15-1, DA19-1	~12-16' (grab)	45	45	45	45	45	45	Fifteen soil borings (g)	DA01-1, DA02-1, DA03-1, DA04-1, DA05-1, DA09-1, DA10-1, DA11-1, DA11-2, DA12-1, DA12-2, DA13-1, DA14-1, DA15-1, DA19-1	(7-10') (10-13') (13-16')
Gate J-28/Museum of Flight	2	2						Two new grabs	RISB-15, RISB-16	~12-16' (grab)							None	None	None
Groundwater seeps	7	7	7	7	7	7	7	Seven known groundwater seeps	SP-24, SP-26, SP-27, SP‑28, SP-33, SP-35, SP-37	None							None	None	None
Bank Erosion								None	None	None	TBD	TBD	TBD	TBD	TBD	TBD	TBD, based on erosion observed	BE-1, BE-2, etc.	One discrete sample per 20 feet of bank erosion observed

Abbreviations and Acronyms:

AOC = Area of Concern
bgs = below ground surface
ID = identification
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
RCRA = Resource Conservation and Recovery Act
SIM = selected ion monitoring
SWMU = Solid Waste Management Unit
TBD = to be determined
TPH = total petroleum hydrocarbons
VOC = volatile organic compound
WT = water table

Notes:

(a) Washington State Department of Ecology method. All other methods are US Environmental Protection Agency methods.
(b) Samples field filtered.
(c) Maximum number of water samples to be collected per area.
(d) Maximum number of soil samples to be collected per area.
(e) The groundwater sample for PCB Aroclors (8082A) at BDC-05-05 will be collected as a split sample; the primary sample will be analyzed for PCB Aroclors (8082A) and the split sample will be held and potentially analyzed for PCB Congeners (1668C) by Washington State Department of Ecology at a laboratory of their choice.
(f) The groundwater grab samples for PCB Aroclors (8082A) in SWMU-43 will be collected as split samples; the primary samples will be analyzed for PCB Aroclors (8082A) and the split samples will be analyzed for PCB Aroclors (8082A) by Washington State Department of Ecology at a laboratory of their choice.
(g) The soil samples for PCB Aroclors (8082A) in SWMU-16 and SWMU-43 will be collected as split samples; the primary samples will be analyzed for PCB Aroclors (8082A) and the split samples will be held and a subset potentially analyzed for PCB Congeners (1668C) by Washington State Department of Ecology at a laboratory of their choice.

Table A-2
Sample Containers, Preservatives, and Holding Times
Sampling and Analysis Plan
Boeing Developmental Center
Tukwila, Washington

Matrix	Method	Container	Preservative	Holding Time (a)	Laboratory Performing Analyses
Soil	Gasoline-range Petroleum Hydrocarbons by NWTPH-Gx	2 x 40-mL glass	Methanol	14 days	ARI
Groundwater	Gasoline-range Petroleum Hydrocarbons by NWTPH-Gx	40-mL glass	<6°C; Add HCl to pH<2	14 days	ARI
Soil	Diesel- and Oil-range Petroleum Hydrocarbons by NWTPH-Dx	8-oz wide-mouth glass	<6°C	14 days/40 days	ARI
Groundwater	Diesel- and Oil-range Petroleum Hydrocarbons by NWTPH-Dx	2 x 500-mL amber glass	<6°C	7 days/40 days	ARI
Soil	Total Metals by SW-846 6010C	4-oz wide-mouth glass	<6°C	180 days	ARI
Groundwater	Total/Dissolved Metals by SW-846 6010C	500-mL high-density polyethylene	<6°C; Total metals or field filtered, HNO_3 to pH <2	180 days	ARI
Groundwater	Total/Dissolved Mercury by SW-846 7471B	500-mL high-density polyethylene	<6°C; Total metals or field filtered, 5 mL 1:1 HNO_3	28 days	ARI
Soil	VOCs by SW-846 8260D	40-mL amber glass	<6°C; $NaHSO_4$ (2 vials), Methanol (2 vials)	14 days	ARI
Groundwater	VOCs by SW-846 8260D	40-mL glass, no headspace	<6°C; HCl to pH<2 (b)	14 days (7 days unpreserved or pH >2)	ARI
Soil	PAHs by SW-846 8270E-SIM	8-oz wide-mouth glass	<6°C	14 days/40 days	ARI
Groundwater	PAHs by SW-846 8270E-SIM	2 x 500-mL amber glass	<6°C	7 days/40 days	ARI

Table A-2
Sample Containers, Preservatives, and Holding Times
Sampling and Analysis Plan
Boeing Developmental Center
Tukwila, Washington

Matrix	Method	Container	Preservative	Holding Time (a)	Laboratory Performing Analyses
Soil	PCBs by SW-846 8082A	8-oz wide-mouth glass	<6°C	365 days/40 days	ARI (c)
Groundwater	PCBs by SW-846 8082A	2 x 500-mL amber glass	<6°C	365 days/40 days	ARI (c)
Soil	PCBs by 1668C	8-oz wide-mouth glass	<6°C	365 days/40 days	TBD (d,e)
Groundwater	PCBs by 1668C	2 x 500-mL amber glass	<6°C	365 days/40 days	TBD (d,e)

Acronyms/Abbreviations:

°C = degrees Celsius
ARI = Analytical Resources, Inc.
HCl = hydrochloric acid
HNO_3 = nitric acid
mL = milliliter
$NaHSO_4$ = sodium hydrogen sulfate
oz = ounces
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SIM = selected ion monitoring
TBD = to be determined
VOC = volatile organic compound

Notes:

Level IIA data validation will be conducted for all analytes, excluding PCBs by 1668C (see footnote e).

(a) Time from sample collection to extraction/time from sample extraction to analysis.

(b) Analysis of acid-reactive volatiles (if applicable) must be completed from unpreserved samples per the analytical method.

(c) Level IIA data validation will be conducted for PCBs by SW-846 8082A.

(d) Samples collected for Method 1668C will be collected as split samples for analysis by a laboratory selected by Washington State Department of Ecology. Once collected and handed to a representative of Washington State Department of Ecology, the proper handling, preservation, analysis, and data validation of these samples will be the responsibility of Washington State Department of Ecology.

(e) Level IV data validation is required for PCBs by 1668C.

APPENDIX B

Quality Assurance Project Plan (QAPP)

Final
Quality Assurance Project Plan
Remedial Investigation Work Plan
Boeing Developmental Center
Tukwila, Washington

January 27, 2021

Prepared for

The Boeing Company
Seattle, Washington

LANDAU ASSOCIATES

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Final
Quality Assurance Project Plan
Remedial Investigation Work Plan
Boeing Developmental Center
Tukwila, Washington

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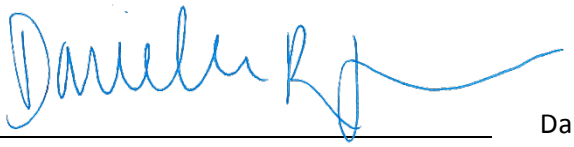
Document reviewed by:  Danille Jorgensen

Quality Assurance Manager

Date: January 27, 2021
Project No.: 0025093.120.012
File path: P:\025\093\FileRm\R\RI Work Plan\FINAL\Appendix B - Final QAPP\Final QAPP Signature Page.docx
Project Coordinator: LJL

LANDAU ASSOCIATES

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ATTACHMENTS

Attachment	Title
B-1	Laboratory Standard Operating Procedures
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LIST OF ABBREVIATIONS AND ACRONYMS

ANSI ..... American National Standards Institute
AOC ..... Area of Concern
ARI ..... Analytical Resources, Inc.
ASQC ..... American Society of Quality Control
Boeing ..... The Boeing Company
CLP ..... Contract Laboratory Program
COC ..... chain of custody
DQI ..... data quality indicator
DQO ..... data quality objective
Ecology ..... Washington State Department of Ecology
EDD ..... electronic data deliverable
EPA ..... US Environmental Protection Agency
EQuIS ..... Environmental Quality Information Systems
eV ..... electron volt
ft ..... feet, foot
HASP ..... health and safety plan
HAZWOPER ..... Hazardous Waste Operations and Emergency Response
LAI ..... Landau Associates, Inc.
LCS ..... laboratory control sample
LCSD ..... laboratory control sample duplicate
LDW ..... Lower Duwamish Waterway
MDL ..... method detection limit
MQO ..... measurement quality objective
MS ..... matrix spike
MSD ..... matrix spike duplicate
PAH ..... polycyclic aromatic hydrocarbon
PCB ..... polychlorinated biphenyl
PCOC ..... potential contaminant of concern
PID ..... photoionization detector
PQL ..... practical quantitation limit
QA ..... quality assurance
QAPP ..... quality assurance project plan
QC ..... quality control
RI ..... remedial investigation
RPD ..... relative percent difference
SAP ..... sampling and analysis plan
Site ..... Boeing Developmental Center
SL ..... screening level

LIST OF ABBREVIATIONS AND ACRONYMS (CONT'D)

SOPs ..... standard operating procedures
SWMU ..... Solid Waste Management Unit
TPH..... total petroleum hydrocarbons
VOC ..... volatile organic compound
WAC ..... Washington Administrative Code

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) establishes the quality assurance (QA) objectives for the remedial investigation (RI) being conducted at The Boeing Company (Boeing) Developmental Center (Site) located in Tukwila, Washington (Figures B-1 and B-2). This plan presents the quality control (QC) procedures developed to meet project QA objectives.

1.1 Distribution List

The following list identifies those individuals to receive an electronic copy of the approved QAPP, as well as any subsequent revised versions of the documentation:

- Christa Colouzis—Project Manager for the Washington State Department of Ecology (Ecology) (cboe461@ecy.wa.gov)
- Lindsey Erickson—Project Manager for Boeing (lindsey.e.erickson@boeing.com)
- Ken Reid—Consultant (Landau Associates, Inc. [LAI]) Project Manager (kreid@landauinc.com)
- Danille Jorgensen—Consultant (LAI) Quality Assurance Officer (djorgensen@landauinc.com)
- Kelly Bottem—Project Coordinator for Analytical Resources, Inc. (ARI) (Kelly.bottem@arilabs.com).

1.2 Project Organization

Site RI activities will be implemented by Boeing; Lindsey Erickson is the project manager. LAI is responsible for preparing documents associated with the planned RI activities, implementing the activities, and reporting the RI results to Boeing. Ken Reid is the LAI RI project manager and will communicate directly with Lindsey Erickson, as necessary, during the course of RI activities. Mr. Reid will be responsible for implementing and executing the technical, QA, and administrative aspects of the RI and will manage LAI staff working on this project. Danille Jorgensen, the designated LAI Quality Assurance officer, is responsible for the overall management of the project-specific QA and QC requirements, including field and laboratory QC. LAI's staff managing field operations will report field progress and problems to Mr. Reid on a daily basis and will be responsible for managing subcontractors, as necessary, that support RI activities at the Site. Christine Kimmel is the designated Health and Safety Manager for field activities.

Specific QA responsibilities for this project are listed in Table B-1. The QA manager will be responsible for QA oversight during investigation activities including sampling events, analytical laboratory coordination, and direct implementation of this QAPP. The QA manager will be responsible for overseeing data validation and for confirming that the QA objectives of the project are met.

2.0 PROJECT BACKGROUND / DESCRIPTION

The Site is located at 9725 East Marginal Way South in Tukwila, Washington near Boeing Field and the Military Flight Center (now called the Military Delivery Center). The Site is bounded by the Lower Duwamish Waterway (LDW) on the west and south, and by East Marginal Way South on the east and the Museum of Flight and Slip 6 on the north. The Site is at an average elevation of approximately 20 feet (ft) above mean sea level. Surface topography at and in the vicinity of the Site is generally flat. The Site and surrounding area is paved.

The Site is an aircraft and aerospace research and development complex, primarily supporting projects for the US Department of Defense. The facility currently consists of more than 30 buildings on approximately 112 acres. It continues to be the primary research and development center for carbon fiber composite structures.

Various existing information evaluations, environmental investigations, and remedial actions have been conducted at the Site to characterize and evaluate the chemical quality and physical condition of soil, groundwater, air, and sediment, or to address specific releases. Descriptions of previous activities are provided in the text of the RI work plan.

2.1 Project Goals and Objectives

This QAPP has been prepared to cover work related to the RI. The specifics of the RI investigation are presented in the RI work plan published concurrently with this QAPP.

The purpose of this QAPP is to provide specific QA and QC procedures to ensure that sample collection, handling, and analysis will result in data of sufficient quality to plan and evaluate remedial actions at this site. These QA and QC procedures will support the evaluation and interpretation of data determined to be of acceptable quality and completeness. This QAPP has been prepared based on the requirements outlined in the US Environmental Protection Agency's (EPA's) Guidance for Quality Assurance Project Plans (EPA 2002), EPA's Requirements for Quality Assurance Project Plans (EPA 2001), and Ecology's Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies (Ecology 2016).

To the extent possible, the procedures included in this QAPP have been standardized to support effective evaluation of data resulting from sampling of the various media that has the potential to be evaluated at the Site. In the event that additional investigation activities are performed following the publication of this QAPP (i.e., additional activities not addressed in the RI work plan), work plan addenda will be prepared to document data quality objectives and sampling, and will include any revisions to screening levels (SLs), practical quantitation limits (PQLs), sampling procedures, and laboratories, as needed.

ARI in Tukwila, Washington is the laboratory to be used for planned RI activities. Analytical testing will be in accordance with the methodologies established by the EPA (EPA 1983, 1999) and Standard Methods for the Examination of Water and Wastewater, 20th edition (APHA 1998). The EPA compendium of test methods (SW-846) provides for the analytical procedures to be used as well as the specific application of those procedures. Laboratory standard operating procedures (SOPs) are provided in Attachment B-1.

3.0 QUALITY ASSURANCE OBJECTIVES

This section presents the QA and QC objectives and processes including data quality objectives (DQOs), data quality indicators (DQIs), measurement quality objectives (MQOs), and QC procedures for field and laboratory work.

3.1 Data Quality Objectives

DQOs specify the environmental decisions that the data will support and the corresponding level of data quality required to ensure decisions are based on sound scientific data. The DQOs for this project are summarized below:

- Obtain data that are representative of Site conditions
- Characterize concentrations of potential contaminants of concern (PCOCs) in soil and groundwater, which may include volatile organic compounds (VOCs); gasoline-, diesel-, and oil-range total petroleum hydrocarbons (TPH); polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); total and/or dissolved metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, and/or zinc)
- Obtain data that are comparable to applicable screening criteria

3.2 Data Quality Indicators

DQIs are used to establish DQOs and are discussed in detail below. A summary of DQIs and their associated MQOs are presented by sample matrix in Table B-2.

3.2.1 Precision

Precision is a measure of variability in the results of replicate measurements due to random error (Ecology 2016). Precision is best expressed in terms of the standard deviation or relative percent difference (RPD). QC sample types that can be used to evaluate precision include field and laboratory duplicates, matrix spike duplicates (MSDs), and laboratory control sample duplicates (LCSDs). The precision of duplicate measurements will be expressed as an RPD, which is calculated by dividing the absolute value of the difference of the two measurements by the average of the two measurements, and expressing it as a percentage. The formula for RPD calculation is shown below:

$$\mathrm{RPD} = \left[\frac{|\mathrm{D1} - \mathrm{D2}|}{[(\mathrm{D1} + \mathrm{D2}) \div 2]}\right] \times 100\%$$

Where:

D1 = first measurement value

D2 = second measurement value (duplicate).

3.2.2 Accuracy

Accuracy is a combination of precision and bias (described in Section 3.2.7), in that it represents the degree to which a measured value represents the known value (Ecology 2016). Accuracy is expressed as the percent recovery of spiked samples (matrix spike [MS], laboratory control sample [LCS], and surrogate spike). The general formula used to calculate percent recovery is shown below (for MS/MSD percent recovery, the result from the unspiked sample is taken into account in the formula):

$$\%R = \left[\frac{SSR}{C_s}\right] \times 100\%$$

Where:

%R = percent recovery

SSR = spiked sample result

C_s = concentration of the spike added.

3.2.3 Representativeness

Representativeness is an indicator of how accurately a result reflects the desired characteristic(s) of a defined population, accounting for both temporal and spatial variability (Ecology 2016). Representativeness qualitatively describes how well the analytical data characterize an area of concern. Representativeness is largely determined by the sampling design; analytical parameters for use in its evaluation include method-specified holding times and preservation requirements, and matrix heterogeneity. The sampling design for this project is discussed in the RI work plan.

3.2.4 Comparability

Comparability is the "degree of confidence with which one data set can be compared to another" (Ecology 2016). QC procedures and MQOs, as stated in this QAPP, will provide for measurements that are consistent and representative of the media and conditions measured.

3.2.5 Completeness

Completeness is a measure of "the amount of valid data obtained from a measurement system compared to the amount that could be expected to be obtained under normal conditions" (EPA 2009). Field completeness is calculated as the number of actual samples collected divided by the number of planned samples. Analytical completeness is calculated as the number of valid data points divided by the total number of data points requested. Data points are considered invalid if they are rejected during data validation. The data validation approach for this project is provided in Section 6.0. The requirements for field sampling and analytical completeness are 90 percent each.

3.2.6 Sensitivity

Sensitivity is the capability of a method or an instrument to discern the difference between very small amounts of a substance. For the purposes of this project, sensitivity is the lowest concentration that can be accurately detected by the analytical method, which is defined by the laboratory as the PQL. The analytical method will be considered sufficiently sensitive if the PQLs are below the specific SLs for the area under investigation. Proposed method and target PQLs are presented in Table B-3.

3.2.7 Bias

Bias is the systematic or persistent distortion of a measurement process that causes errors in one direction. Bias of the laboratory results will be evaluated based on analysis of reference materials, method blanks, and MS samples, as described in Section 6.5.

4.0 SPECIAL TRAINING / CERTIFICATION

Personnel performing onsite investigation tasks will have completed formal 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) health and safety training, in compliance with 29 Code of Federal Regulations 1910.120 and Chapter 296 of the Washington Administrative Code (WAC). Certificates of successful completion of training, which will be maintained in personnel health and safety files, will verify on-the-job training for those tasks staff are assigned to perform. At least one member of each field team and the designated site safety officer will be trained in cardiopulmonary resuscitation and first aid.

Borings will be completed and monitoring wells will be constructed by a licensed drilling contractor in the state of Washington, following Washington State well standards. Oversight of drilling and well installation activities will be performed by an environmental professional familiar with environmental sampling and construction of resource protection wells.

As indicated in Section 2.1, ARI in Tukwila, Washington is the laboratory to be used for planned RI activities. This laboratory is not in the Contract Laboratory Program (CLP), but is accredited through Ecology for the applicable methods and target analytes listed in this QAPP. All laboratories shall maintain current applicable state certification or US Department of Defense Environmental Laboratory Accreditation Program certification for the methods and target analytes listed in this QAPP while performing analyses for the project. Laboratories used for this project have a documented QA program that complies with standards promulgated by the American National Standards Institute/American Society of Quality Control (ANSI/ASQC 1994); ANSI's Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs (Johnson 1994); and the EPA's Requirements for Quality Assurance Project Plans (EPA 2001).

Excavation, trenching, and shoring (WAC 296-155-Part N) activities or work in confined spaces (WAC 296-62-Part M) are not anticipated in this scope of work; therefore, this QAPP does not address training in physical worker safety issues that may be associated with excavation or confined spaces.

5.0 DOCUMENTS AND RECORDS

This section describes the management requirements for production, distribution, and storage of documents and records associated with planned activities at the Site.

5.1 Document Distribution

Prior to beginning field activities, field staff will receive and have an opportunity to review project-related documents pertinent to the field activities, including work plans, sampling and analysis plans (SAPs), and health and safety plans (HASPs), as appropriate to the planned activities. Project managers/coordinators will meet with field staff prior to field activities to review the relevant plans accordingly. The HASP will be reviewed in the field on the first day of activities, with each field person documenting their attendance to the HASP review on a sign-in sheet. The HASP will be reviewed again every few days or when a new field person begins working on field activities. The SAP, HASP, and work plans for each phase of the project will be finalized prior to commencement of field activities, and only the finalized versions will be distributed to field staff. Changes to procedures and plans after finalization will be documented as addenda and distributed along with the original finalized versions.

5.2 Field Documentation

Field equipment will have reference and related manuals stored in with the equipment. In addition, equipment that requires calibration will be accompanied by a calibration logbook. Field staff will record the calibration process in the logbook every time a calibration is performed.

A complete record of field activities will be maintained for the duration of the field phase of the work. Documentation will include the following:

- Daily recordkeeping by field personnel of field activities
- Recordkeeping of samples collected for analysis (field sampling forms)
- Use of sample labels and tracking forms for samples collected for analysis.

The field logs will provide a description of sampling activities completed, sampling personnel, daily weather conditions, and a record of modifications to the procedures and plans identified in the work plan or related documentation. The field logs are intended to provide sufficient data and observations to enable project staff to reconstruct events that occurred during the sampling period.

Field logs will be supplemented by sample collection forms, boring logs, and groundwater well logs completed by field staff, as applicable. The information that will be recorded in these forms is specified in the RI SAP.

Additional records associated with drilling will include driller's daily reports and well-related documentation when a well is installed.

Sample possession and handling will also be documented with chain-of-custody (COC) forms so that it is traceable from the time of sample processing in the field, to delivery to the laboratory, and to the ultimate data analysis. Sample handling and COC procedures are described in Section 6.3.

The following example field forms are provided in Attachment B-2:

- Chain-of-Custody
- Field Report
- Groundwater Low-Flow Sample Collection Form
- Log of Exploration
- Soil/Sediment Sample Collection Form
- Survey Field Notes Form
- As-Built Well Completion Form
- Well Development Record Form
- Seep Reconnaissance Survey Form.

5.3 Analytical Data Records

Laboratory analytical data reports will be provided in electronic format by the laboratory. These reports will be included as appendices in documents where data are reported, and will be kept along with all other documents in the project files. Data will be provided in a Level II laboratory report format. Data package elements are listed in Section 6.7.

5.4 Storage

Documents and records associated with the project (i.e., final documents, billing, and invoice records) and the documents described in Sections 5.2 and 5.3 will be stored in electronic form in project files on LAI's servers for the duration of the project and 10 years subsequent from the date of completion of work, as per the requirements in the associated Agreed Order (No. DE 16275).

6.0 DATA GENERATION AND ACQUISITION

This section provides an overview of the data collecting and handling processes that will ensure data quality that meets project standards. More details about these processes are included in the RI SAP.

6.1 Sampling Process Design

A sampling design that achieves the DQOs described in Section 3.0 has been prepared and is detailed in the RI SAP.

6.2 Sampling Methods and Containers

Samples will be collected using methods that are standard in environmental remediation. A detailed description of the sampling methods for each medium is provided in the RI SAP. Methods for sampling, decontamination, and well installation are provided in the RI work plan and Sampling and Analysis Plan, published concurrently with this QAPP.

Sampling containers will be provided by the laboratory. Extra containers will be requested to ensure that clean containers are available to replace any broken or misused containers during sampling events. The laboratory will provide kits (e.g., plunger for EPA Method 5035 soil sampling) to collect samples for analyses that require special methods to fill the sample container.

6.3 Sample Handling and Custody

Soil and water samples submitted to the analytical laboratory will be collected in the appropriate sample containers and preserved as specified in Table B-4. The storage temperatures and maximum holding times for physical/chemical analyses are also provided in Table B-4.

The transportation and handling of samples will be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to release of samples. Samples will be logged on a COC form (Attachment B-2) and will be kept in coolers on ice until delivery to the analytical laboratory. The COC will accompany each shipment of samples to the laboratory. A sample is in custody if at least one of the following is true:

- It is in someone's physical possession.
- It is in someone's view.
- It is secured in a locked container or otherwise sealed so that tampering will be evident.
- It is kept in a secured area, restricted to authorized personnel only.

Sample control and COC protocols in the field and during transport to the laboratory will be conducted in general conformance with the procedures described below:

- As few persons as possible will handle samples.

- Sample bottles will be obtained new or pre-cleaned from the laboratory performing the analyses.
- The sample collector will be personally responsible for the completion of the COC record and the care and custody of samples collected until they are transferred to another person or dispatched properly under COC rules.
- The onsite team leader will oversee implementation of the field custody procedures during the field work and, in the event of non-compliance, will determine if corrective action is required.
- The coolers in which the samples are shipped will be accompanied by the COC record identifying their contents. The original record and laboratory copy will accompany the shipment (sealed inside the shipping container). The other copy will be distributed as appropriate to LAI's QA officer or designee. The QA officer for this project is Danille Jorgensen.
- Shipping containers will be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information will be entered in the "remarks" section of the COC record.
- If sent by mail, the package will be registered with return receipt requested. If sent by common carrier, a bill of lading will be used. Freight bills, postal services receipts, and bills of lading will be retained as part of the permanent documentation.

When samples are transferred, the individuals relinquishing and receiving the samples will sign the COC form and record the date and time of transfer. The sample collector will sign the form in the first signature space. The only exception to this is the shipment of samples via commercial carriers. Because sample containers are sealed with the COC record inside prior to delivery to the carrier, the custody signature will be that of the individual taking possession of the samples from the carrier at its final destination. Each person taking custody will observe whether the shipping container is correctly sealed and in the same condition as noted by the previous custodian; deviations will be noted on the appropriate section of the COC record.

A designated sample custodian at the laboratory will accept custody of the shipped samples, verify the integrity of the custody seals, and certify that the sample identification numbers match those on the COC record. The custodian will then enter sample identification number data into a bound logbook, which is arranged by a project code and station number. If containers arrive with broken custody seals, the laboratory will note this on the COC record and immediately notify the sampler who will, in turn, notify the QA manager and the LAI project manager.

6.4 Analytical Methods

Laboratory methods and target PQLs for all potential analyses of soil and water are summarized in Table B-3. Samples collected and analyzed as part of the RI will be reported to the PQL, and in those instances when the PQL is greater than the SL, the SL will be raised to the PQL.

For all groundwater analyses except dissolved metals, suspended material in the sample may be allowed to settle prior to analysis of the supernatant. For the dissolved metals analyses, the samples will be filtered in the field to remove any suspended material.

Sample containers, preservation, and holding times are provided in Table B-4.

6.5 Quality Control

Field and analytical laboratory control samples will be collected and analyzed to evaluate data precision, accuracy, representativeness, comparability, completeness, bias, and sensitivity of the analytical results for this investigation. The quality control samples and the frequency at which they will be collected and/or analyzed by matrix and analysis is summarized in Table B-2. The evaluation of these quality control samples is further discussed in Section 8.

6.6 Instrument/Equipment/Consumables

To ensure that field measurement is accomplished accurately, field equipment undergoes routine maintenance and calibration as described below.

6.6.1 Testing, Inspection, and Maintenance

LAI performs routine inspections and preventive maintenance (parts replacement and cleaning) for all pieces of field equipment in our supply and equipment room. Maintenance activities are conducted by our field technicians, who are specifically trained in the use, operation, and maintenance of the equipment. All field equipment used during this project, which may include water level indicators, photoionization detectors (PIDs), and water field parameter meters (e.g., pH), will be cleaned and decontaminated prior to use. Each piece of equipment will be inspected and tested to ensure proper working function and facilitate replacement or repair of broken or non-operational components. Extra batteries will be included in the equipment cases or in field vehicles for replacing dead batteries during field work. Extra disposables will be packed for equipment requiring disposables for use, such as ferrous iron kits.

Field equipment is maintained by the field equipment manager. Field staff continually notify the field equipment manager when equipment maintenance is needed. This system ensures the equipment is maintained and working for the next field project. Equipment will be repaired or replaced, as needed.

Meters used to make field measurements will be further inspected and tested during calibration, as described in the next section.

6.6.2 Calibration and Frequency

All field equipment is calibrated according to the manufacturers' guidelines and recommendations. If a PID is used during this project, it will be calibrated on a daily basis according to the manufacturer's specifications. The PID preferred by LAI field personnel uses a 10.2-eV (electron volt) probe and is

calibrated using a manufacturer-supplied standard gas (isobutylene, equivalent to 34 parts per million benzene). Similarly, water field parameter meters will be calibrated at the start of each sampling day with laboratory-prepared calibration standards within the range of the anticipated measurement. An instrument will also be recalibrated at any time an anomalous reading suggests instrument imprecision or inaccuracy.

6.6.3 Inspection/Acceptance of Supplies and Consumables

Supplies are ordered and maintained by the field equipment manager. Disposables and consumables include nitrile gloves, Ziploc® bags for sample ice, field test kits, and polyethylene tubing.

6.7 Data Management

All laboratory analytical results (including split sample analytical results; see Section 4.0 of SAP), including QC data, will be submitted electronically. Electronic formats will include a PDF file of the laboratory report, and electronic data deliverable (EDD) files that will be uploaded directly to an Environmental Quality Information Systems (EQuIS) database; the data management team will supply the required format for the EDDs. EQuIS EDDs will be provided by the laboratory in the EFWEDD format (also known as EQuIS 4-File), using LAI valid values. After validation of the data, any applicable qualifiers will be added to the database. Split sample data validation is the responsibility of Ecology.

Field data (groundwater field parameter data and water levels measurements) will be entered into cumulative Excel® spreadsheets and/or the EQuIS database. Data will be verified to determine all entered data are correct and without omissions and errors.

Field notes, including field reports, sampling forms, survey forms, test pit logs, boring logs, and well construction diagrams, will be maintained in the project files. Survey notes will be reduced to provide coordinates and elevations that will be uploaded to the database.

Level II laboratory reports will include the following:

- Case narrative, including adherence to prescribed protocols, non-conformity events, corrective measures, and/or data deficiencies (including initial and continuing instrument calibrations, and explanations for any missed target PQLs)
- Sample analytical results
- Surrogate recoveries
- Matrix spike/matrix spike duplicate results
- Blank spike/blank spike duplicate results
- Laboratory duplicates
- Blank results
- Sample custody (including signed COC records, and laboratory sample receipt forms)
- Analytical responsibility.

7.0 ASSESSMENT AND OVERSIGHT

This section describes assessment and oversight.

7.1 Assessment and Response Actions

Assessments during implementation of the project will include daily communication and updates during field work and data quality review by the LAI project manager and field staff. Response actions to assessed issues will be coordinated between the LAI project manager, field staff, the project manager for Boeing, and involved subcontractors, as appropriate. Data management assessment activities are discussed in greater detail in Section 8.2.4.

If any project non-conformance is considered significant or requires special expertise, corrective action(s) may include the following:

- Reanalyzing the samples, if holding times can be met
- Resampling and analyzing
- Evaluating and amending sampling and analytical procedures
- Accepting data and acknowledging the level of uncertainty or inaccuracy by flagging the data.

8.0 DATA VALIDATION AND USABILITY

This section describes data validation and usability.

8.1 Data Review, Verification, and Validation

All RI data (including split sample analytical results; see Section 4.0 of SAP) will be verified and validated to determine that the results are acceptable and meet the quality objectives described in Section 3.

Validation of the data will be performed by a data validator with guidance from applicable portions of the National Functional Guidelines for Organic Data Review (EPA 2016b) and the National Functional Guidelines for Inorganic Data Review (EPA 2016a).

All data generated as part of the RI will undergo a Level IIA verification and validation, with the exception of samples analyzed for PCB Congeners by EPA Method 1668C. Validation of all data associated with the split samples is the responsibility of Ecology.

EPA Level IIA-equivalent verification and validation elements are presented in Table B-5 and will include the following:

- Verification that the laboratory data package contains all necessary documentation (including COC records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related QC data, and QC acceptance criteria)
- Verification that all requested analyses, special cleanups, and special handling methods were conducted
- Verification that QC samples were analyzed per the method and frequency specified in the QAPP
- Evaluation of sample holding times
- Evaluation of QC data compared to acceptance criteria, including field QC samples (field duplicates, trip blanks, and/or equipment blanks) and laboratory QC samples (method blanks, surrogate recoveries, laboratory duplicate and/or replicate results, and LCS results)
- Verification that PQLs for target analytes are at or below the target PQLs specified in the QAPP.

PCB Congener data (EPA Method 1668C) will undergo a Level IV verification and validation, as specified in EPA's Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (EPA 2009).

In the event that a portion of the data is outside the DQO limits or the EPA guidance (EPA 2016a, b), or sample collection and/or documentation practices are deficient, corrective action(s) will be initiated. Corrective action, as described in Section 7.1, may include any of the following:

- Rejection of the data and resampling
- Qualification of the data
- Modified field and/or laboratory procedures.

8.2 Verification and Validation Methods

The processes that will be used to verify and validate data are described in the sections below.

8.2.1 Data Verification Methods

This section describes data verification methods.

8.2.1.1 Chain of Custody

COC forms will be reviewed by field personnel upon completion of sampling, who will verify information against the packed sample coolers they represent. A copy of the COC form will be retained in the electronic project files, and the original and remaining copies will be taped inside the cooler for delivery to the analytical laboratory.

8.2.1.2 Corrective Actions

The corrective action process may be initiated by any project team member. The process consists of identifying a problem, acting to eliminate the problem, documenting the corrective action, monitoring the effectiveness of the corrective action, and verifying that the problem has been sufficiently addressed. The LAI field lead will be responsible for correcting and resolving situations in the field that may result in non-compliance with the QAPP. Corrective measures identified by the field lead will be immediately documented in the field notes. Examples of corrective actions for field measurements may include: repetition of a measurement to check the error, check for proper adjustments for ambient conditions, check of batteries, recalibration, replacement of instruments, revisions to COCs forms, and (if necessary) stop work. Laboratory project managers are responsible for ensuring that corrective action processes as identified in their quality systems manuals, SOPs, and this QAPP are followed. The laboratory project manager is responsible for notifying the LAI QA manager of any non-conformance. If a corrective action is initiated at the laboratory, it shall be narrated in the laboratory data package. Technical staff will be responsible for reporting any QA non-conformance or suspected deficiencies they identify to the LAI project manager, who will in turn notify the LAI QA manager. The LAI QA manager is responsible for assessing the suspected deficiency or non-conformance and its potential to impact data quality.

If corrective actions are required, a copy of the documented corrective action taken will be maintained in the electronic project files. At the completion of the sampling event, the LAI QA officer

and the LAI project manager will ensure all appropriate corrective actions have been taken and that the corrective action reports have been included in the electronic project files; if corrective actions have not been taken, the project manager will ensure action is taken.

8.2.1.3 Field Notes

Field notes will be reviewed internally and placed in the electronic project files.

8.2.1.4 Analytical Data Packages

All laboratory data packages will be verified internally by the laboratory performing the work for completeness and technical accuracy prior to submittal.

All laboratory data packages, with the exception of waste characterization samples, will be verified by a data validator who is not associated with the collection or analysis of samples, interpretation of sample data, or with any decision-making process within the scope of the investigation.

The data validator will conduct an EPA Level IIA-equivalent validation and verification, which will be performed with guidance from applicable portions of the National Functional Guidelines for Organic Data Review (EPA 2016b) and the National Functional Guidelines for Inorganic Data Review (EPA 2016a). Additional information regarding the data validation process is provided in the following sections.

8.2.2 Data Validation Methods

Validation of the analytical data will include the criteria listed below. Validation procedures will be followed to ensure data are evaluated properly, completely, and consistently for use in meeting DQOs.

The data validator (unless noted otherwise) will complete the following:

- Data deliverables: Ensure all required verified information on sampling and analysis has been made available as part of data validation (see Section 8.2.1; this also includes associated planning documents [i.e., work plan, SAP, or QAPP]).
- Analytes: Ensure the required list of analytes was reported as specified in the planning documents.
- COC: Review the COC form for traceability of the data from sample collection through to data reporting.
- Holding times: Ensure samples were analyzed within specified holding times (i.e., method, procedure, or planning document). If holding times were not met, confirm the laboratory has documented any deviations and made appropriate notifications to the project team, and that approval to proceed was received prior to analysis.
- Sample handling: Ensure sample handling, receipt, and storage procedures were followed, with any deviations documented.

- Sampling methods and procedures: Establish that required sampling methods were used and any deviations documented. Ensure the sampling procedures and field measurements met performance criteria and any deviations were documented.
- Field transcription: Authenticate transcription accuracy of field data (i.e., from field forms to report tables).
- Analytical methods and procedures: Establish that required analytical methods were used, with any deviations documented. Ensure QC samples met performance criteria, with any deviations documented.
- Data qualifiers: Determine laboratory data qualifiers were defined and applied as specified (i.e., method, procedure, or planning document).
- Laboratory transcription: Authenticate accuracy of transcription of analytical data (i.e., instrument to the Laboratory Information Management System, or laboratory notebook to reporting form).
- Standards: Determine that standards are traceable and meet requirements (method, procedure, or planning document).
- Communication: Confirm required communication procedures were followed by field and/or laboratory personnel.
- Audits: Review laboratory audit reports, accreditation, and certification records for the laboratory's performance on specific methods; review field forms to verify compliance with work plan and QAPP procedures.

8.2.3 Data Validation Review and Data Qualification

For Level IIA data validation, data quality will be assessed by comparing QC parameters to the appropriate criteria (i.e., limits) as specified in the planning documents (i.e., work plan, SAP, QAPP).

Analytical data may be qualified based on the data validation review. Qualifiers will be consistent with applicable EPA National Functional Guidelines and will be used to provide data users with an estimate of the level of uncertainty associated with the qualified result.

Data validation results will be evaluated with respect to assigned qualifiers to determine any data usability issues. The following qualifiers may be assigned during the data validation process:

J Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

NJ The analyte has been "tentatively identified" or "presumptively identified" as present and the associated numerical value is the estimated concentration in the sample.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

The objectives, evaluations, and actions employed during the data validation process will be guided by EPA National Functional Guidelines. Laboratories will be permitted to provide CLP-like forms in lieu of original CLP forms. The data validation criteria will not strictly adhere to national functional guidelines, but will also take into consideration method criteria for preservation and holding times; laboratory-specified criteria for surrogate, laboratory control samples, laboratory duplicates, and matrix spikes; and the data validator's professional judgment.

9.0 PROJECTS USING EXISTING DATA

Because the Boeing Developmental Center RI is part of an ongoing program, secondary data may be used to evaluate performance and concentration trends. Historical data will be considered usable for the decisions being made on this project.

10.0 USE OF THIS QUALITY ASSURANCE PROJECT PLAN

This Quality Assurance Project Plan has been prepared for the exclusive use of The Boeing Company and applicable regulatory agencies for specific application to the Boeing Developmental Center in Tukwila, Washington. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by LAI, shall be at the user's sole risk. LAI 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.

11.0 REFERENCES

ANSI/ASQC. 1994. American National Standard - Quality Systems - Model for Quality Assurance in Design, Development, Production, Installation, and Servicing. American Society for Quality. August 1. https://law.resource.org/pub/us/cfr/ibr/002/asqc.q9001.1994.pdf.

APHA, AWWA, and WEF. 1998. Standard Methods for the Examination of Water and Wastewater. American Public Health Association, American Water Works Association, and Water Environment Federation. January 1.

Ecology. 2016. Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies. Publication No. 04-03-030. Washington State Department of Ecology. Revised December. https://fortress.wa.gov/ecy/publications/summarypages/0403030.html.

EPA. 1983. Methods for Chemical Analysis of Water and Wastes. Publication No. EPA-600 / 4-79-020. Office of Research and Development, US Environmental Protection Agency. March.

EPA. 1999. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods; Third Edition; Final Update III-A. EPASW-846.3-3a. 3rd ed. Solid Waste and Emergency Response, US Environmental Protection Agency. March.

EPA. 2001. EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5. EPA/240/B-01/003. US Environmental Protection Agency. March.

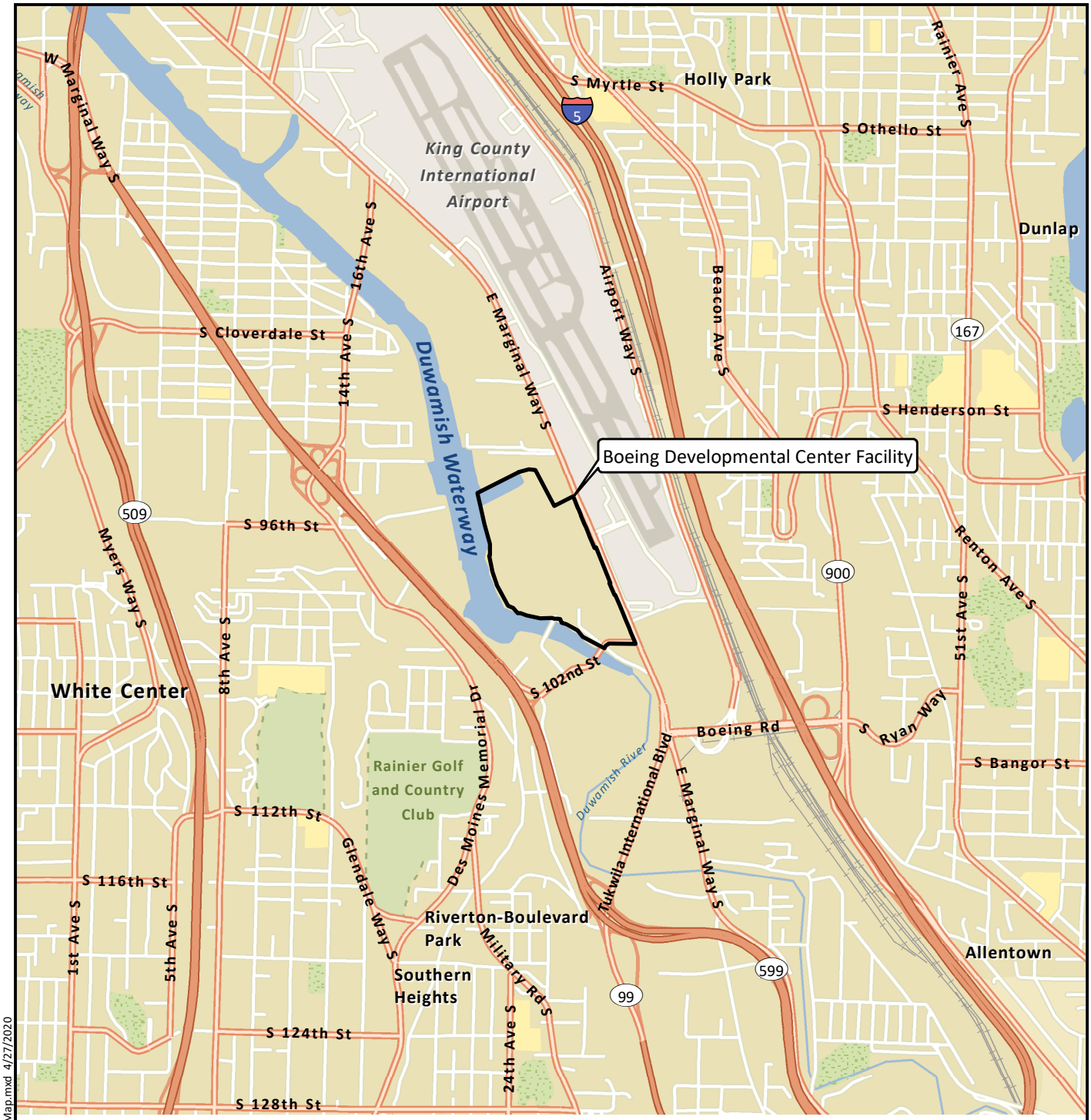
EPA. 2002. Guidance for Quality Assurance Project Plans, EPA QA/G-5. EPA/240/R-02/009. US Environmental Protection Agency. December.

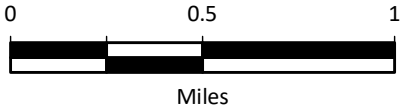
EPA. 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85; EPA 540-R-08-005. US Environmental Protection Agency. January 13.

EPA. 2016a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-540-R-2016-001 OLEM 9355.0-133. US Environmental Protection Agency. September. https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/national_functional_guidelines_for_superfund_inorganic_methods_data_review_0.pdf.

EPA. 2016b. National Functional Guidelines for Superfund Organic Methods Data Review. EPA-540-R-2016-002 OLEM 9355.0-134. US Environmental Protection Agency. September. https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/national_functional_guidelines_for_superfund_organic_methods_data_review_0.pdf.

Johnson, Gary L. 1994. ANSI/ASQC E4: Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs. American Society of Quality Control. http://asq.org/ee/2003/06/energy-and-environmental-division-newsletter-v23-i02-feature-article-ansi-asqc-e4-1994-a-quali.html?shl=088571.





Data Source: Esri 2012

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LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Vicinity Map**	Figure **B-1**

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Legend

Facility Boundary

0 300 600

Scale in Feet

Data Sources: Boeing; Esri World Imagery.

Note

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

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Facility Map**	Figure B-2

Table B-1
Key Personnel Project Responsibilities
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

Name	Title/Role	Organization Affiliation	Responsibilities
Lindsey Erickson	Project Manager	The Boeing Company	Manages the project for The Boeing Company.
Christa Colouzis	Project Manager	Washington State Department of Ecology	Manages the project for the Washington State Department of Ecology.
Ken Reid	Consultant Project Manager	Landau Associates, Inc.	Supervises and coordinates all work for the project. These responsibilities include project planning and execution, scheduling, staffing, data evaluation, report preparation, subcontracts, and managing deliverables.
Danille Jorgensen	Quality Assurance Officer	Landau Associates, Inc.	Oversees and directs quality assurance (QA) reviews for the project, including periodic reports, analytical program requirements, and schedules before submittal to the US Environmental Protection Agency for review and comment. Responsible for inputting all field data and the maintenance of the database.
Kristi Schultz	Data Specialist	Landau Associates, Inc.	Reviews laboratory analytical data and provides data validation. Has oversight responsibility for management and integrity of the data.
Christine Kimmel	Site Health & Safety Manager	Landau Associates, Inc.	Responsible for review and implementation of the Health and Safety Plan (HASP).
Kelly Bottem	Laboratory Project Manager	Analytical Resources, Inc.	Manages laboratory analysis and reporting.

Table B-2
Data Quality Objectives
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

DQI	QC Sample or Activity Used to Assess MQO	MQO	Frequency	Sampling or Analytical DQI
Soil Samples Analyzed for Gasoline-Range Petroleum Hydrocarbons by Method NWTPH-Gx				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <50%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank, Trip Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Soil Samples Analyzed for Diesel- and Motor Oil-Range Petroleum Hydrocarbons by Method NWTPH-Dx				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <50%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Soil Samples Analyzed for Total Metals by SW-846 6010C				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Accuracy	LCS	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/Laboratory Duplicate	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <50%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S

Table B-2
Data Quality Objectives
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

DQI	QC Sample or Activity Used to Assess MQO	MQO	Frequency	Sampling or Analytical DQI
Soil Samples Analyzed for Volatile Organic Compounds by SW-846 8260D				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <50%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank, Trip Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Soil Samples Analyzed for Polycyclic Aromatic Hydrocarbons by SW-846 8260D-SIM				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <50%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank, Trip Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Soil Samples Analyzed for Polychlorinated Biphenyls by SW-846 8082A				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <50%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S

Table B-2
Data Quality Objectives
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

DQI	QC Sample or Activity Used to Assess MQO	MQO	Frequency	Sampling or Analytical DQI
Soil Samples Analyzed for Polychlorinated Biphenyls by 1668C (Ecology Split Sampling)				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Bias/Contamination	Method Blank, Equipment Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch; 1 equipment blank per sampling location	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Sensitivity	Ion Ratio Identification Criteria	An EMPC value is reported when a peak was detected but did not meet ion ratio identification criteria, as required by the method; therefore the result cannot be considered as a positive identification for the analyte. When the ion ratio for analyte identification was not met, the lab reported the analyte as not-detected (ND) with a "UEMPC" flag. No additional action was taken.	NA	A
Water Samples Analyzed for Gasoline-Range Petroleum Hydrocarbons by Method NWTPH-Gx				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <20%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank, Trip Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S

Table B-2
Data Quality Objectives
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

DQI	QC Sample or Activity Used to Assess MQO	MQO	Frequency	Sampling or Analytical DQI
Water Samples Analyzed for Diesel- and Motor Oil-Range Petroleum Hydrocarbons by Method NWTPH-Dx				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <20%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Water Samples Analyzed for Total or Dissolved Metals by EPA Methods SW-846 6010C/7471A				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Accuracy	LCS	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/Laboratory Duplicate	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <20%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Water Samples Analyzed for Volatile Organic Compounds by SW-846 8260D				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <20%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank, Trip Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S

Table B-2
Data Quality Objectives
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

DQI	QC Sample or Activity Used to Assess MQO	MQO	Frequency	Sampling or Analytical DQI
Water Samples Analyzed for Polycyclic Aromatic Hydrocarbons by SW-846 8270E-SIM				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <20%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Water Samples Analyzed for Polychlorinated Biphenyls by SW-846 8082A				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Precision	Field Duplicates	RPD <20%	1 per 20 samples or one per analytical group	S&A
Bias/Contamination	Method Blank	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S

Table B-2
Data Quality Objectives
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

DQI	QC Sample or Activity Used to Assess MQO	MQO	Frequency	Sampling or Analytical DQI
Water Samples Analyzed for Polychlorinated Biphenyls by 1668C (Ecology Split Sampling)				
Representativeness	Cooler Temperature	<6°C	All project samples	S
Bias	Surrogates	Recoveries within laboratory-specified control limits	All project and QA samples	A
Accuracy	LCS/LCSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Precision	LCS/LCSD and MS/MSD	RPDs within laboratory-specified control limits	1 per 20 samples or one per analytical batch	A
Method performance for matrix, bias	MS/MSD	Recoveries within laboratory-specified control limits	1 per 20 samples or one per analytical batch	S&A
Bias/Contamination	Method Blank, Source Blanks, Equipment Blanks	Target analytes not detected at concentrations >1/2 the PQL	1 method blank per 20 samples, 1 every 12 hours, or 1 per analytical batch	S&A
Analytical Completeness	Number of usable (not rejected) results out of total number of results	90%	NA	S&A
Field Completeness	Number of samples collected out of planned samples	95%	NA	S
Sensitivity	Ion Ratio Identification Criteria	An EMPC value is reported when a peak was detected but did not meet ion ratio identification criteria, as required by the method; therefore the result cannot be considered as a positive identification for the analyte. When the ion ratio for analyte identification was not met, the lab reported the analyte as not-detected (ND) with a "UEMPC" flag. No additional action was taken.	NA	A

Notes:

Samples collected for analysis of Polychlorinated Biphenyls by 1668C will be the responsibility of Washington State Department of Ecology. Landau Associates, Inc. will collect the split samples, but will not be responsible for handling, preservation, analysis, or data validation.

Abbreviations/Acronyms:

% = percent
°C = degrees Celsius
A = analytical
DQI = data quality indicator
Ecology = Washington State Department of Ecology
LCS = laboratory control spike
LCSD = laboratory control spike duplicate
MQO = measurement quality objective
MS = matrix spike
MSD = matrix spike duplicate
NA = not applicable
PQL = practical quantitation limit
QA = quality assurance
QC = quality control
RPD = relative percent difference
S = sampling
SIM = Selected Ion Monitoring
TBD = to be determined

Table B-3
Soil and Groundwater Targeted Practical Quantitation Limits
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

Analyte	CAS No.	Soil (a, b)					Groundwater (a)				
		2002 Preliminary Screening Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (c)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units	2013 Proposed Cleanup Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (f)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units
Total Petroleum Hydrocarbons				NWTPH-Gx					NWTPH-Gx		
Gasoline Range	86290-81-5	100 (g)	30	5.0	30	mg/kg	800	--	100	800	µg/L
				NWTPH-Dx					NWTPH-Dx		
Diesel Range	N/A	2,000 (g)	260	5.00	260	mg/kg	--	--	100	500 (h)	µg/L
Motor Oil Range	N/A	--	2,000	10.0	2,000	mg/kg	--	--	200	500 (h)	µg/L
Total Metals				Method 6010C/6020A					Method 6020A/7470A		
Arsenic	7440-38-2	7	7.0	5.00	7.0	mg/kg	8.0	8.0	0.2	8.0	µg/L
Barium	7440-39-3	250,000	102	0.300	102	mg/kg	--	200	0.5	200	µg/L
Cadmium	7440-43-9	1	1	0.200	1	mg/kg	--	1.2	0.1	1.2	µg/L
Chromium, Total	7440-47-3	5,250,000 (i)	48	0.500	48	mg/kg	--	--	0.5	--	µg/L
Copper	7440-50-8	36	36	0.5	36	mg/kg	8.0	3.1	0.5	3.1	µg/L
Lead	7439-92-1	500	50	2.00	50	mg/kg	--	8.1	0.1	8.1	µg/L
Mercury	7439-97-6	0.07	0.07	0.0250	0.07	mg/kg	--	0.025	0.1	0.1	µg/L
Zinc	7440-66-6	100	86	4.0	86	mg/kg	--	81	4.0	81	µg/L
Dissolved Metals									Method 6020A/7470A		
Arsenic	7440-38-2	--	--	--	--	--	8.0	8.0	0.2	8.0	µg/L
Barium	7440-39-3	--	--	--	--	--	--	200	0.5	200	µg/L
Cadmium	7440-43-9	--	--	--	--	--	--	1.2	0.1	1.2	µg/L
Chromium, Total	7440-47-3	--	--	--	--	--	--	--	0.5	--	µg/L
Copper	7440-50-8	--	--	--	--	--	8.0	3.1	0.5	3.1	µg/L
Lead	7439-92-1	--	--	--	--	--	--	8.1	0.1	8.1	µg/L
Mercury	7439-97-6	--	--	--	--	--	--	0.025	0.1	0.1	µg/L
Zinc	7440-66-6	--	--	--	--	--	--	81	4.0	81	µg/L
Volatile Organic Compounds				Method EPA 8260C/D					Method EPA 8260C/D		
1,1,1,2-Tetrachloroethane	630-20-6	--	38,000	1.00	38,000	µg/kg	--	7.4	0.200	7.4	µg/L
1,1,1-Trichloroethane	71-55-6	3,300,000	370,000	1.00	370,000	µg/kg	--	5,500	0.200	5,500	µg/L
1,1,2,2-Tetrachloroethane	79-34-5	--	1.7	1.00	1.7	µg/kg	--	0.3	0.200	0.3	µg/L
1,1,2-Trichloroethane	79-00-5	230	5.0	1.00	5.0	µg/kg	--	0.9	0.200	0.9	µg/L
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--	2,400,000,000	2.00	2,400,000,000	µg/kg	--	180	0.200	180	µg/L
1,1-Dichloroethane	75-34-3	350,000,000	180,000	1.00	180,000	µg/kg	--	11	0.200	11	µg/L
1,1-Dichloroethene	75-35-4	20	25,000	1.00	20	µg/kg	2,300	130	0.200	130	µg/L
1,2,3-Trichlorobenzene	87-61-6	--	20,000	5.00	20,000	µg/kg	--	--	0.500	--	µg/L
1,2,3-Trichloropropane	96-18-4	--	33	2.00	33	µg/kg	--	--	0.500	--	µg/L
1,2,4-Trichlorobenzene	120-82-1	--	1.4	5.00	5.00	µg/kg	--	0.037	0.500	0.500	µg/L
1,2,4-Trimethylbenzene	95-63-6	--	800,000	1.00	800,000	µg/kg	--	240	0.200	240	µg/L
1,2-Dibromo-3-chloropropane	96-12-8	--	1,250	5.00	1,250	µg/kg	--	--	0.500	--	µg/L
1,2-Dichlorobenzene	95-50-1	--	36	1.00	36	µg/kg	--	4.6	0.200	4.6	µg/L
1,2-Dichloroethane	107-06-2	480	350	1.00	350	µg/kg	--	4.2	0.200	4.2	µg/L
1,2-Dichloropropane	78-87-5	--	16	1.00	16	µg/kg	--	3.1	0.200	3.1	µg/L
1,3,5-Trimethylbenzene	108-67-8	--	800,000	1.00	800,000	µg/kg	--	--	0.200	--	µg/L
1,3-Dichlorobenzene	541-73-1	--	--	1.00	--	µg/kg	--	2.0	0.200	2.0	µg/L
1,3-Dichloropropane	142-28-9	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
1,4-Dichlorobenzene	106-46-7	--	110	1.00	110	µg/kg	--	4.9	0.200	4.9	µg/L
2-Butanone	78-93-3	2,100,000,000	48,000,000	5.00	48,000,000	µg/kg	--	1,700,000	5.00	1,700,000	µg/L
2-Chlorotoluene	95-49-8	--	1,600,000	1.00	1,600,000	µg/kg	--	--	0.200	--	µg/L
2-Hexanone	591-78-6	--	400,000	5.00	400,000	µg/kg	--	--	5.00	--	µg/L
4-Chlorotoluene	106-43-4	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
4-Isopropyltoluene	99-87-6	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
4-Methyl-2-Pentanone (MIBK)	108-10-1	--	6,400,000	5.00	6,400,000	µg/kg	--	470,000	5.00	470,000	µg/L
Acetone	67-64-1	350,000,000	72,000,000	5.00	72,000,000	µg/kg	110,000	--	5.00	110,000	µg/L

Table B-3
Soil and Groundwater Targeted Practical Quantitation Limits
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

		Soil (a, b)					Groundwater (a)				
Analyte	CAS No.	2002 Preliminary Screening Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (c)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units	2013 Proposed Cleanup Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (f)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units
Benzene	71-43-2	220,000	8.8	1.00	8.8	µg/kg	2.0	1.6	0.200	1.6	µg/L
Bromobenzene	108-86-1	--	640,000	1.00	640,000	µg/kg	--	--	0.200	--	µg/L
Bromochloromethane	74-97-5	--	--	1.00	--	µg/kg	--	--	0.200	--	µg/L
Bromodichloromethane	75-27-4	--	15	1.00	15	µg/kg	--	1.8	0.200	1.8	µg/L
Bromoethane	74-96-4	--	--	2.00	--	µg/kg	--	--	0.200	--	µg/L
Bromoform	75-25-2	--	78	1.00	78	µg/kg	--	12	0.200	12	µg/L
Bromomethane	74-83-9	--	1,200	1.00	1,200	µg/kg	--	13	1.00	13	µg/L
Carbon Disulfide	75-15-0	350,000,000	8,000,000	1.00	8,000,000	µg/kg	3,900	400	0.200	400	µg/L
Carbon Tetrachloride	56-23-5	--	2.9	1.00	2.9	µg/kg	--	0.35	0.200	0.35	µg/L
Chlorobenzene	108-90-7	--	1,700	1.00	1,700	µg/kg	--	200	0.200	200	µg/L
Chloroethane	75-00-3	--	--	1.00	--	µg/kg	--	19,000	0.200	19,000	µg/L
Chloroform	67-66-3	2,500	806	1.00	806	µg/kg	9.4	1.2	0.200	1.2	µg/L
Chloromethane	74-87-3	--	--	1.00	--	µg/kg	--	150	0.500	150	µg/L
cis-1,2-Dichloroethene	156-59-2	350,000,000	160,000	1.00	160,000	µg/kg	130	--	0.200	130	µg/L
cis-1,3-Dichloropropene	10061-01-5	--	11	1.00	11	µg/kg	--	2.0	0.200	2.0	µg/L
Dibromochloromethane	124-48-1	--	12	1.00	12	µg/kg	--	2.2	0.200	2.2	µg/L
Dibromomethane	74-95-3	--	800,000	1.00	800,000	µg/kg	--	--	0.200	--	µg/L
Ethylbenzene	100-41-4	250,000	260	1.00	260	µg/kg	1.7	31	0.200	1.7	µg/L
Ethylene Dibromide (1,2-Dibromoethane)	106-93-4	--	500	1.00	500	µg/kg	--	0.27	0.200	0.27	µg/L
Hexachlorobutadiene	87-68-3	--	11	5.00	11	µg/kg	--	0.01	0.500	0.500	µg/L
Iodomethane	74-88-4	--	--	1.00	--	µg/kg	--	--	1.00	--	µg/L
Isopropylbenzene	98-82-8	--	8,000,000	1.00	8,000,000	µg/kg	270	--	0.200	270	µg/L
m,p-Xylene	179601-23-1	7,000,000,000	16,000,000	2.00	16,000,000	µg/kg	1,500 (j)	--	0.400	1,500 (j)	µg/L
Methylene Chloride	75-09-2	7,000	430	2.00	430	µg/kg	--	100	1.00	100	µg/L
Naphthalene	91-20-3	140,000	40	5.00	40	µg/kg	26	1.4	0.500	1.4	µg/L
n-Butylbenzene	104-51-8	--	4,000,000	1.00	4,000,000	µg/kg	--	--	0.200	--	µg/L
n-Propylbenzene	103-65-1	--	8,000,000	1.00	8,000,000	µg/kg	--	--	0.200	--	µg/L
o-Xylene	95-47-6	7,000,000,000	16,000,000	1.00	16,000,000	µg/kg	1,500 (j)	430	0.200	430	µg/L
sec-Butylbenzene	135-98-8	--	8,000,000	1.00	8,000,000	µg/kg	--	--	0.200	--	µg/L
Styrene	100-42-5	4,400,000	300,000	1.00	300,000	µg/kg	--	8,200	0.200	8,200	µg/L
tert-Butylbenzene	98-06-6	--	8,000,000	1.00	8,000,000	µg/kg	--	--	0.200	--	µg/L
Tetrachloroethene	127-18-4	100	30	1.00	30	µg/kg	5.3	2.9	0.200	2.9	µg/L
Toluene	108-88-3	1,450,000	920	1.00	920	µg/kg	1,300	130	0.200	130	µg/L
Total Xylenes	1330-20-7	--	16,000,000	2.00	16,000,000	µg/kg	1,500	330	0.600	330	µg/L
trans-1,2-Dichloroethene	156-60-5	180,000	5,200	1.00	5,200	µg/kg	940	1,000	0.200	940	µg/L
trans-1,3-Dichloropropene	10061-02-6	--	10	1.00	10	µg/kg	--	2.0	0.200	2.0	µg/L
trans-1,4-Dichloro 2-Butene	110-57-6	--	--	5.00	--	µg/kg	--	--	1.00	--	µg/L
Trichloroethene	79-01-6	540	4.4	1.00	4.4	µg/kg	1.4	0.7	0.200	0.7	µg/L
Trichlorofluoromethane	75-69-4	--	24,000,000	1.00	24,000,000	µg/kg	--	120	0.200	120	µg/L
Vinyl Acetate	108-05-4	--	80,000,000	5.00	80,000,000	µg/kg	--	7,800	0.200	7,800	µg/L
Vinyl Chloride	75-01-4	3,300	1.0	1.00	1.0	µg/kg	2.4	0.18	0.200	0.18	µg/L

Table B-3
Soil and Groundwater Targeted Practical Quantitation Limits
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

		Soil (a, b)					Groundwater (a)				
Analyte	CAS No.	2002 Preliminary Screening Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (c)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units	2013 Proposed Cleanup Level	Duwamish Waterway Preliminary Cleanup Level (PCUL) (f)	Laboratory PQLs (d)	Proposed Screening Level (e)	Units
PAHs								EPA Method 8270D/E SIM			
1-Methylnaphthalene	90-12-0	--	29,000	5.00	29,000	µg/kg	--	--	0.0100	--	µg/L
2-Methylnaphthalene	91-57-6	--	670	5.00	670	µg/kg	--	--	0.0100	--	µg/L
Acenaphthene	83-32-9	70,000	500	5.00	500	µg/kg	--	5.3	0.0100	5.3	µg/L
Acenaphthylene	208-96-8	--	1,300	5.00	1,300	µg/kg	--	--	0.0100	--	µg/L
Anthracene	120-12-7	52,000,000	960	5.00	960	µg/kg	--	2.1	0.0100	2.1	µg/L
Benzo(a)anthracene	56-55-3	220	1.1	5.00	5.00	µg/kg	--	0.00016	0.0100	0.0100	µg/L
Benzo(a)pyrene	50-32-8	--	0.31	5.00	5.00	µg/kg	--	0.000016	0.0100	0.0100	µg/L
Benzo(g,h,i)perylene	191-24-2	--	670	5.00	670	µg/kg	--	--	0.0100	--	µg/L
Benzofluoranthenes, Total	N/A	--	3,200	10.0	3,200	µg/kg	--	--	0.0100	--	µg/L
Chrysene	218-01-9	250	127	5.00	127	µg/kg	--	0.016	0.0100	0.016	µg/L
Dibenz(a,h)anthracene	53-70-3	--	0.57	5.00	5.00	µg/kg	--	0.000016	0.0100	0.0100	µg/L
Dibenzofuran	132-64-9	--	540	5.00	540	µg/kg	--	--	0.0100	--	µg/L
Fluoranthene	206-44-0	370,000	1,700	5.00	1,700	µg/kg	--	1.8	0.0100	1.8	µg/L
Fluorene	86-73-7	2,200,000	540	5.00	540	µg/kg	--	3.7	0.0100	3.7	µg/L
Indeno(1,2,3-cd)pyrene	193-39-5	--	11	5.00	11	µg/kg	--	0.00016	0.0100	0.0100	µg/L
Naphthalene	91-20-3	140,000	40	5.00	40	µg/kg	--	1.4	0.0100	1.4	µg/L
Phenanthrene	85-01-8	--	1,500	5.00	1,500	µg/kg	--	--	0.0100	--	µg/L
Pyrene	129-00-0	15,000,000	2,600	5.00	2,600	µg/kg	--	2.0	0.0100	2.0	µg/L
cPAH TEQ (k)	N/A	--	0.31	--	0.31	µg/kg	--	0.000016	--	0.0100	µg/L
PCBs				EPA Method 8082A					EPA Method 8082A		
Aroclor 1016	12674-11-2	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1242	53469-21-9	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1248	12672-29-6	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1254	11097-69-1	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1260	11096-82-5	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1221	11104-28-2	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1232	11141-16-5	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Aroclor 1268	11100-14-4	--	--	4.00	--	µg/kg	--	--	0.0100	--	µg/L
Total PCBs	--	330	0.000027	--	4.00	µg/kg	--	0.000007	--	0.0100	µg/L

Abbreviations and Acronyms:

-- = not applicable
µg/kg = micrograms per kilogram
µg/L = micrograms per liter
CAS = Chemical Abstracts Services
cPAH = carcinogenic polycyclic aromatic hydrocarbo
EPA = US Environmental Protection Agency
MDL = method detection limit
mg/kg =milligrams per kilogram
mg/L = milligrams per liter
N/A = not available
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyls
PQL = practical quantitation limit
SIM = selected ion monitoring
SL = screening level

Notes:

(a) Screening levels listed in this table are provided to evaluate laboratory method detection and reporting limits. Screening levels will be revised and updated as needed in the RI Report based on criteria applicable at the time that the RI report is prepared.
(b) Soil results and associated laboratory practical quantitation limits will be reported on a dry weight basis.
(c) Lower Duwamish Waterway preliminary cleanup levels for nonpotable vadose zone (April 2019).
(d) Laboratory practical quantitation limits are defined as the lowest concentrations that can be accurately detected by the analytical method.
(e) The proposed screening level is selected as the lower of the Lower Duwamish Waterway PCUL or preliminary screening level/proposed cleanup level. In those instances when the laboratory PQL is greater than either of these two values, the proposed screening level is raised to the laboratory PQL.
(f) Lower Duwamish Waterway preliminary cleanup levels for nonpotable groundwater (April 2019).
(g) Model Toxics Control Act Method A industrial value.
(h) Model Toxics Control Act Method A cleanup level.
(i) Cleanup level for Chromium III.
(j) 2013 proposed cleanup level for total xylenes.
(k) If one or more of the cPAHs has never been detected in any sample at the site, then a value of zero will be assigned to a non-detected concentration of that cPAH for these calculations. If a cPAH is not detected in a sample but has been detected at the site a value of one-half the reporting limit will be assigned to that cPAH for the purpose of the TEQ calculation.

Table B-4
Sample Containers, Preservatives, and Holding Times
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

Matrix	Method	Container	Preservative	Holding Time (a)	Laboratory Performing Analyses
Soil	Gasoline-range Petroleum Hydrocarbons by NWTPH-Gx	2 x 40-mL glass	Methanol	14 days	ARI
Groundwater	Gasoline-range Petroleum Hydrocarbons by NWTPH-Gx	40-mL glass	<6°C; Add HCl to pH<2	14 days	ARI
Soil	Diesel- and Oil-range Petroleum Hydrocarbons by NWTPH-Dx	8-oz wide-mouth glass	<6°C	14 days/40 days	ARI
Groundwater	Diesel- and Oil-range Petroleum Hydrocarbons by NWTPH-Dx	2 x 500-mL amber glass	<6°C	7 days/40 days	ARI
Soil	Total Metals by SW-846 6010C	4-oz wide-mouth glass	<6°C	180 days	ARI
Groundwater	Total/Dissolved Metals by SW-846 6010C	500-mL high-density polyethylene	<6°C; Total metals or field filtered, HNO_3 to pH <2	180 days	ARI
Groundwater	Total/Dissolved Mercury by SW-846 7471B	500-mL high-density polyethylene	<6°C; Total metals or field filtered, 5 mL 1:1 HNO_3	28 days	ARI
Soil	VOCs by SW-846 8260D	40-mL amber glass	<6°C; $NaHSO_4$ (2 vials), Methanol (2 vials)	14 days	ARI
Groundwater	VOCs by SW-846 8260D	40-mL glass, no headspace	<6°C; HCl to pH<2 (b)	14 days (7 days unpreserved or pH >2)	ARI
Soil	PAHs by SW-846 8270E-SIM	8-oz wide-mouth glass	<6°C	14 days/40 days	ARI
Groundwater	PAHs by SW-846 8270E-SIM	2 x 500-mL amber glass	<6°C	7 days/40 days	ARI

Table B-4
Sample Containers, Preservatives, and Holding Times
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

Matrix	Method	Container	Preservative	Holding Time (a)	Laboratory Performing Analyses
Soil	PCBs by SW-846 8082A	8-oz wide-mouth glass	<6°C	365 days/40 days	ARI (c)
Groundwater	PCBs by SW-846 8082A	2 x 500-mL amber glass	<6°C	365 days/40 days	ARI (c)
Soil	PCBs by 1668C	8-oz wide-mouth glass	<6°C	365 days/40 days	TBD (d,e)
Groundwater	PCBs by 1668C	2 x 500-mL amber glass	<6°C	365 days/40 days	TBD (d,e)

Acronyms/Abbreviations:

°C = degrees Celsius
ARI = Analytical Resources, Inc.
HCl = hydrochloric acid
HNO_3 = nitric acid
mL = milliliter
$NaHSO_4$ = sodium hydrogen sulfate
oz = ounces
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SIM = selected ion monitoring
TBD = to be determined
VOC = volatile organic compound

Notes:

Level IIA data validation will be conducted for all analytes, excluding PCBs by 1668C (see footnote e).

(a) Time from sample collection to extraction/time from sample extraction to analysis.

(b) Analysis of acid-reactive volatiles (if applicable) must be completed from unpreserved samples per the analytical method.

(c) Level IIA data validation will be conducted for PCBs by SW-846 8082A.

(d) Samples collected for Method 1668C will be collected as split samples for analysis by a laboratory selected by Washington State Department of Ecology. Once collected and handed to a representative of Washington State Department of Ecology, the proper handling, preservation, analysis, and data validation of these samples will be the responsibility of Washington State Department of Ecology.

(e) Level IV data validation is required for PCBs by 1668C.

Table B-5
Data Validation Elements
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

QC Element	Evaluation Criteria	Qualification	Comments
Case Narrative	A case narrative shall be included with all laboratory packages.	Depending on issues presented in case narrative, additional qualification to the data may be warranted.	
Chain of Custody	A COC shall be included with all laboratory packages.	If discrepancies are noted on the COC, then the laboratory report may be revised to correct any issues.	
Preservation	Preservation conditions as noted in laboratory report are compared to method-specified requirements.	Depending on the preservation issue, data may be qualified as estimated (J/UJ) or rejected.	
Headspace	VOA vials should be free of headspace and air bubbles.	If sample was analyzed from a vial that contained headspace or bubbles, data will be qualified as estimated (J/UJ).	Applicable only to VOAs.
Sample Filtration	Samples that are field filtered shall be identified as such on the COC. Filtered metals will be reported as dissolved fraction.	If discrepancies are identified or problems with filtration are noted, then a revised lab report may be issued.	Applicable only to dissolved metals.
Holding Times	Holding times are compared to method-specified hold times.	If hold times are exceeded, then all results for the method are qualified as estimated (J/UJ). If hold times are grossly exceeded, then detected results are qualified as estimated (J) and no detected results are rejected (R).	
Method Blanks	Detections of target analytes should be < PQL for the analyte or < level of acceptable blank contamination specified in the QAPP	If sample result is less than the blank concentration and between MDL and PQL, raise result to PQL and flag "U." If sample result is less than the blank concentration and greater than the PQL, flag "U." Apply method blank results to all samples in the same analytical batch.	

Table B-5
Data Validation Elements
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

QC Element	Evaluation Criteria	Qualification	Comments
Field/Equipment Blanks	Detections of target analytes should be < PQL for the analyte or < level of acceptable blank contamination specified in the QAPP	If sample result is less than the blank concentration and between MDL and PQL, raise result to PQL and flag "U." If sample result is less than the blank concentration and greater than the PQL, flag "U." Apply field blank results to samples with same collection date; apply equipment blank results to samples associated with equipment.	
Trip Blanks	Detections of target analytes should be < PQL for the analyte or < level of acceptable blank contamination specified in the QAPP	If sample result is less than the blank concentration and between MDL and PQL, raise result to PQL and flag "U." If sample result is less than the blank concentration and greater than the PQL, flag "U." Apply trip blank results to samples shipped in the same cooler.	
LCS	Recoveries are compared to laboratory-specified QC limits.	If % is <10%, qualify detected results as estimated (J) and reject nondetected results. If %R is < laboratory-specified QC limits, qualify results as estimated (J/UJ). If %R is > laboratory-specified QC limits, qualify detected results as estimated (J).	
Surrogates	Recoveries are compared to laboratory-specified QC limits.	If % is <10%, qualify detected results as estimated (J) and reject nondetected results. If %R is < laboratory-specified QC limits, qualify results as estimated (J/UJ). If %R is > laboratory-specified QC limits, qualify detected results as estimated (J).	Not applicable for inorganics

Table B-5
Data Validation Elements
Quality Assurance Project Plan
Boeing Developmental Center
Tukwila, Washington

QC Element	Evaluation Criteria	Qualification	Comments
MS	Recoveries are compared to laboratory-specified QC limits.	If % is <10%, qualify detected results as estimated (J) and reject nondetected results. If %R is < laboratory-specified QC limits, qualify results as estimated (J/UJ). If %R is > laboratory-specified QC limits, qualify detected results as estimated (J).	
Laboratory Duplicate or MSD or LCSD	RPDs are compared to laboratory-specified QC limits.	If RPDs exceed laboratory-specified QC limits, then results for the sample that was analyzed in duplicate will be qualified as estimated (J/UJ).	
Dilutions	Results shall be reported within the calibration range of the instrument.	Results reported by the laboratory that are outside the calibration range of the instrument (E-qualified) will be marked as not reportable during data validation. The detected result that is within the calibration range is the reportable result. Nondetected results will be reported from the lowest dilution run.	
Field duplicates	RPDs should be <20% for aqueous samples and <35% for soil samples. For detected results <5 times their PQLs, results should be within +- the PQL.	RPD >20% waters (>35% soils), flag detected results "J." Differences in concentrations > the PQL, flag detected results "J."	

Abbreviations and Acronyms:

% = percent
COC = chain of custody
LCS = laboratory control sample
LCSD = laboratory control sample duplicate
MDL = maximum detection limit
MS = matrix spike
MSD = matrix spike duplicate
PQL = practical quantitation limit
QAPP = Quality Assurance Project Plan
QC = quality control
RPD = relative percent difference
VOA = volatile organic analysis

Notes:

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

ATTACHMENT B-1

Laboratory Standard Operating Procedures

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

Gasoline Range Organics
using
Purge and Trap GC/MS

EPA Method 8260D

SOP 431S
Version 003

Revision Date: 6/27/19
Effective Date: 6/27/19

Prepared by:

Jianqing Zhou / Lani Hertzog / Van Spohn

Approvals:

Brian N. Bebee, Laboratory Section Manager

Bob Congleton, Quality Assurance Manager

Annual Review

SOP Number: 431S

Title: Gasoline Range Organics using Purge and Trap GC/MS

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

1. Scope and Application

1.1. This document describes the procedures for performing Volatile Gasoline Range Organics used by Analytical Resources Inc. (ARI). The procedures are based on EPA Method 8260D and EPA Method 8000C Revision 3, March 2003 referenced in Section 19.1. Some text is directly from those documents. Additional guidance is taken from EPA Method 8015C Revision 3, February 2007. BETX Volatile Organics and Volatile Gasoline Additives may also be analyzed with this procedure in conjunction with SOP#700S-Volatile Organic Analysis.

1.2. This method is applicable to most environmental sample matrices, including aqueous (ground water, surface water, waste water, TCLP extracts), solid (soil, sediment, sludge), and waste (waste solvent, oily waste, mousse, tar, polymeric emulsion, filter cake, spent carbon, etc.) samples.

1.3. ARI uses several sample preparation techniques to achieve project and/or client specific detection limits. Routine techniques are summarized in Table 01. Other preparation techniques may be employed to meet client requests.

Table 01
Typical GRO Analyzes performed by ARI

Sample Matrix	Sample size	Extraction Technique	Estimated MRL
Water (GRO)	10 mL	Direct Purge & Trap	.25µg/L
Water (BETX)	10 mL	Direct Purge & Trap	0.5µg/L
Solid (GRO)	5 g	Methanol Extraction	500µg/kg
Solid (BETX)	5 g	Methanol Extraction	25µg/kg

1.4. QLS standards are prepared and analyzed with sample batches and are used to statistically determine detection (LOD) and method reporting limits (MRL). QLS spikes are prepared and analyzed quarterly or more frequently, as necessary to establish DL, LOD and MRL.

1.5. This document describes a purge-and-trap, gas chromatographic/mass spectrometric (GC/MS) procedure. This method is restricted to use by, or under the supervision of, analysts experienced in the use of purge-and-trap systems and gas chromatograph/mass spectrometers, and skilled in the interpretation of mass spectra and their use as a quantitative tool.

2. Summary of the Procedure

2.1. This method requires separate preparation and analysis procedures. Sample preparation is outlined in Section 11.7.4 and 11.7.5. Analysis of prepared sample is accomplished using a Purge & Trap GC-MS instrument described in Section 11.8 through 11.13. The GC-MS system data acquisition, data reduction process and analyte calculations described in this document are performed with Agilent Chemstation Environmental quantitation Software. The formulae are provided for reference and may be used to manually verify calculated results.

2.2. There are two basic sample preparations.

2.2.1. Direct purge and trap where the sample is analyzed with no initial extraction or preparation.

2.2.2. Methanol is used to extract volatile organic compounds which is diluted into organic free water and analyzed.

2.3. Following sample preparation, volatile organic compounds are automatically purged from the sample and injected into the gas chromatograph using a purge-and-trap equipped GC-MS system.

2.3.1. Compounds purged from the sample using Helium are trapped in a tube containing suitable sorbent materials.

2.3.2. The sorbent tube is heated and back flushed with helium to desorb trapped sample components directly onto the GC-MS system following a split to optimize GC performance.

2.4. A narrow bore capillary GC column is temperature-programmed to separate the analytes, which are then detected with a mass spectrometer (MS).

2.5. Quantification of Gas Range Organics is performed by summing up the total RIC response between time ranges determined by hydrocarbon retention time markers. Internal and Surrogate standards eluting within the GRO range are subtracted from the summed response

2.6. Qualitative identifications are confirmed by analyzing standards under the same conditions used for samples and comparing resultant GC retention times and mass spectra.

2.7. Identified target analytes (BETX and Gasoline Additives) are quantified by comparing the detector responses of each analytes' characteristic mass ion and internal standard characteristic mass ion to the responses of these ions in a calibration curve prepared using analytes at known concentration.

2.8. Detection limits for all analytes quantitated using this SOP are set using the low point of the initial calibration curve and validated by QLS studies.

2.8.1. QLS studies are performed regularly for each analyte by each preparatory and analytical method.

2.8.2. DL, LOD and MRL values may be found for each analyte in ARI's Element LIMS.

3. Definitions

3.1. GRO Retention Time (RT) Marker Standard (C6 thru C15 n-Hydrocarbons) purchased form Absolute Standards, Inc.

3.2. CALGAS: perfluoro-tri-n-butylamine (FC-43), CAS 311-89-7.

3.3. Initial Calibration Verification (ICV): a process used to verify that the current instrument calibration is acceptable.

3.4. Second Source Calibration Verification Standard (SCVS): A standard prepared at the mid-point concentration of the initial calibration and prepared from the same source as the initial calibration.

3.5. Detection Limit (DL) – The lowest result that can reliably be distinguished in a matrix from a blank.

3.6. EICP- Extracted Ion Current Profile- A plot of the abundance of a specific ion as a function of time

3.7. Holding Blank: A blank water sample stored along with client samples. A holding blank is analyzed periodically to determine if there is cross contamination of samples introduced during storage in the laboratory. See Section 16 for contamination of holding blanks.

3.8. Initial Calibration (ICAL): a minimum of 6 points, with 7 points typical.

3.9. Secondary Calibration Verification (SCV): a process used to verify that the current instrument calibration is acceptable.

3.10. Secondary Calibration Verification Standard (SCVS): A mid-point concentration standard from a source different than that used for the initial calibration used to demonstrate the validity of the initial calibration. The SCVS is equivalent to the Second Source Standard. The second source standard must be purchased from a different manufacturer than the calibration standard whenever possible.

3.11. Internal Standard (IS): internal standards are compounds added to each standard, sample, and QC sample such that their concentration is the same in each of these sample types. Target analyte response is normalized to the response of an internal standard.

3.12. Blank Spike (BS): OFW spiked with verified amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision or to assess the performance of all or a portion of the measurement system.

3.13. Blank Spike Duplicate (BSD): A replicate BS often used to assess the precision of an analytical method. When insufficient sample volumes exist to perform a required MS/MSD analysis, an BS/BSD may be performed to assess the precision of the analytical method. The BSD is prepared and analyzed identically to the BS. ARI fortifies the BS/BSD with all target analytes.

3.14. LIMS (Laboratory Information Management System): Software used to compile and report final chromatographic data.

3.15. Limit of Detection (LOD) – The lowest result that can be reported while meeting method precision and accuracy requirements.

3.16. Method Reporting Limit (MRL) – The lowest result that may be reported unqualified based on the lowest curve point.

3.17. Matrix Spike (MS): A sample prepared by adding a known mass of target analyte(s) to a specified amount of sample matrix for which an independent estimate of target analyte concentration is available. Matrix spikes are used to determine the effect of the sample matrix on the recovery efficiency of an analytical method. ARI fortifies Matrix Spike samples with all target analytes.

3.18. Matrix Spike Duplicate (MSD): A replicate matrix spike prepared in the laboratory and analyzed to obtain a measure analytical precision.

3.19. Method Blank (MB): A sample of OFW, free of any analytes of interest that is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures.

3.20. Organic Free Water (OFW): ASTM Type 1 water produced by ARI's centralized water purification system and run through a bed of activated charcoal in the VOA laboratory.

3.21. QLS: Quantitation Limit Standard - A matrix spike prepared at reporting limit, used to determine LOD and MRL.

3.22. RIC- Reconstructed Ion Current- A plot of the total instrument response versus time

3.23. RRT-Relative Retention Time- the elution time of an analyte relative to the elution time of its associated internal standard

3.24. Scan Descriptor: Defines a specific mass range for analytes of interest.

3.25. Second Source Standard: A standard from a different manufacturer or lot number other than the standard used to calibrate an instrument. The SSS is used to prepare the Initial Calibration Verification Standard.

3.26. Solvent Blank – A clean sample (OFW and/or MeOH) analyzed using the same conditions as a regular sample. A solvent blank detects system contamination and assures the purity of the solvent. Used as a MB for MeOH extracted samples.

3.27. Surrogate – A substance with properties that mimic the analyte of interest. It is unlikely to be found in environment samples and is added to them for quality control purposes.

3.28. Chemstation™ - A chromatography software package. ARI uses Environmental Chemstation ™ software to identify and quantify Gasoline Range Organics.

3.29. Target™ - A chromatography software package. ARI uses Target™ software to identify and quantify BETX and Gasoline Additives.

4. Interferences

4.1. See SOP 700S Section 4.

5. Safety

5.1. See SOP 700S Section 5.

6. Equipment, Maintenance and Supplies

6.1. See SOP 700S Section 6.

7. Reagents and Standards

7.1. See SOP 700S Section 7.

7.2. Retention time standard: Solution contains normal alkanes n-C_4 through n-C_{12}, 2-Methylpentane, naphthalene and 1,2,4-trimethylbenzene. The BETX standard includes toluene which is always run in conjunction with retention time standards.

8. Sample Collection, Preservation, Shipment, Storage and Disposal

8.1. See SOP 700S Section 8.

9. Quality Control

9.1. Quality Control procedures and requirements are summarized in Appendix 20.1.

9.1.1. Acceptance criteria for ARI's routine analyses listed in the column title "ARI Acceptance Criteria".

9.1.2. When DoD-QSM acceptance criteria differ, they are provided in the "DoD-QSM Acceptance" column

9.2. Some clients and/or projects may have different quality control procedures or criteria. Always read and understand any "special Instructions" supplied by an ARI Project Manager.

9.3. Instrument control:

9.3.1. QLS studies are performed regularly for each analyte by each preparatory and analytical method.

9.3.2. DL, LOD and MRL values may be found for each analyte in the ARI LQAP.

9.3.3. The GC-MS must be tuned to the specifications in Appendix 20-4 before samples are analyzed. It is required that a 5-50ng total BFB standard be analyzed prior to calibration, but not on a daily basis. An ICV, BS, BSD and a method blank be analyzed with acceptable QC before analyzing samples.

9.3.4. Internal standard (IS) area criteria in the samples must be evaluated for retention time shift and EICP areas.

9.3.4.1. If the EICP area for any IS changes by -50% to +100% from the area of the IS in the mid-point of the initial calibration, the samples must be reanalyzed.

9.3.4.2. Retention time shift of internal standards must be ± 0.06 RRT units from the CCV internal standard RT.

9.4. Method performance:

9.4.1. Samples are analyzed in 12 hour run sequences known as QC periods. Each 12 hr QC period begins when an ICVsample analysis starts and ends following the analysis of the last sample injected within 12 hours of the initial sample injection.

9.4.2. One method blank will be performed each 12-hour shift.

9.4.2.1. A method blank is run to demonstrate system cleanliness (no analytes should be detected > 1/2 MRL). Blanks may contain analyte concentrations greater than acceptance limits if the associated samples in the batch are unaffected (i.e., targets are not present in the samples or sample concentrations/responses are greater than 10x the blank. Surrogates are to be within the established control limits.

9.4.2.2. Corrective action must be taken when MB contamination is greater than the report MRL and the samples contain detections of the analyte that are above the reporting limit and less than 10x the concentration found in the blank. Re-analysis is not necessary if the analyte concentration falls well below the action or regulatory limit or if the analyte is deemed not important for the project. See section 16.6.

9.4.2.3. Prepare a water method blank by adding 45 mL organic-free water to a pre-cleaned auto-sampler vial.

9.4.2.4. Prepare a medium soil method blank by adding 900 µL purge and trap grade MeOH to a 45 mL VOA vial containing OFW.

9.4.3. A Blank Spike (BS) Sample must be analyzed before analyzing samples. At a minimum one (BS) must be run in each 12 hr. QC period. It is recommended an (BS) duplicate be analyzed also. The control limits for all compounds is ± 20% or ARI's published historical control limits. The maximum allowed relative percent difference (RPD) for an BS and BSD) is 30%.

9.4.3.1. Compounds that do not meet these limits must be documented on an Analyst Notes Form (Form 8042F) and included in the data package for review

9.4.3.2. Prepare a medium soil BS by adding 900 µL purge and trap grade MeOH to a 45 mL VOA vial containing OFW, then spike the sample with VSS

9.4.3.3. Prepare a soil BS by adding the VSS to 5mL of organic-free water to a final concentration equivalent to that of the CVS.

9.4.4. One set of matrix spikes is analyzed for each 20 samples/matrix/instrument (when requested and adequate sample is available) at a known concentration level within the range curved, typically at 20ng/mL for 5mL waters and 40mg/kg for soils.

9.4.4.1. The MS/MSD samples are run, and the relative percent difference must be calculated between the two control samples. The RPD for each analyte for MS/MSD should be less than 30% and note any deviation >30% in the analyst notes.

9.4.4.2. ARI will not perform MS/MSD analysis on any of the field QC samples delivered as part of a client's QA/QC program (water rinsate samples, field/trip blanks etc.)

9.4.4.3. Dilution of MS/MSD extracts to get either spiked compounds or native analytes on scale is not necessary.

9.4.5. QC limits are provided to bench chemists, managers, and QA review personnel as tools for assessing data quality in real-time at the point of data generation.

9.5. A holding blank will be kept in volatile Refrigerator 21 and will be analyzed every week. Holding blank data is documented in Element.

9.6. Surrogates are added to each sample, blank, and standard, and are used to evaluate the purge and trapping efficiency by measuring recovery. Surrogates are brominated, fluorinated or isotope labeled compounds not expected to be detected in samples.

9.7. Statistical Control- Internal quality control limits for analyte spike and surrogate recoveries and relative percent difference for matrix spike and matrix spike duplicates are statistically generated on an annual basis.

9.7.1. These quality control limits are provided to bench chemists, managers, and QA staff as tools for assessing data quality in real-time at the point of data generation.

9.7.2. Practical considerations relating to their dynamic nature require their presentation in a document separate from this SOP. Current control limits may be found in ARI's Element LIMS.

9.7.3. All analysts using this SOP must use it in conjunction with Control Limit documentation in order to assess data quality and any possible need for corrective actions.

10. Calibration and Standardization

10.1. Summary of VOA calibration procedure:

Step	BTEX Analysis Section	Gas Analysis Section	Procedure
1	10.2	10.2	Prepare Calibration Samples
2	10.3	10.3	Verify Instrument Tune
3	10.4	10.11	Analyze BTEX Calibration samples
4	10.5		Target/Chemstation Calculates RRF & %RSD
5	10.6		Validate analyte response
6	10.7		Analyze Instrument Blank
7	10.710.8		Analyze SCV
8	10.810.9		Evaluate IS Response
9	10.910.10	10.14	Verify Retention Times
10	10.1010.11	10.10	Update Analytical Method

10.2. Prepare Calibration samples:

10.2.1. Using a new unopened vial of Gas or BETX calibration solutions prepare a set of five or more calibration samples containing all target analytes. This is accomplished by spiking

separate volumes of VOA free water with increasing volumes of the VOA spike working standard as listed in Table 03. Calibration samples are prepared in 45 mL VOA vials. The volume of the calibration samples must be equal to the volume that will be analyzed to account for purge efficiencies that vary with sample volume. The concentration of analytes in the lowest level sample must less than or equal to the method reporting limit. The concentrations in the calibration standards define the working range of the method. A set of at least 5 calibration standards containing the method analytes is required. One calibration standard should contain each analyte at the concentration of the reporting limit for that compound. The other calibration standards should contain analytes at concentrations that define the range of the method. The remaining concentrations should correspond to the expected range of concentrations found in real samples but should not exceed the working range of the GC/MS system. ARI typically calibrates with between five and eight calibration levels covering the dynamic range of the instrument and meeting the required reporting limit of the project. The Gasoline and BETX are calibrated separately and quantified using Chemstation and Target Chromatography software respectively.

10.2.2. Gasoline and BETX calibrations are typically performed at the following concentrations.

Table 03 – Typical Calibration Solution Concentrations

Standard	Gas Range (mg/L)	BETX (µg/L)
1	0.10	0.2
2	0.25	0.5
3	0.50	1.0
4	1.0	2
5	2.5	10
6	5.0	20
7		40
8		80

10.2.3. Initial calibration standards, initial calibration verification standards and surrogates for the soil side of the Autosampler are made in a minimum amount of water. The standards are then transferred to 45 mL vials, each containing a magnetic stir bar. Internal standards (IS) and Surrogate standards (SS) are added by the Autosampler.

10.2.4. Initial calibration standards, initial calibration verification standards and surrogates for the water side of the Autosampler are made at volumes for use in 45 mL vials containing magnetic stir bars. The appropriate sample volume of the standard is transferred via the Autosampler to a sparger vessel and purged. The IS/SS solution is added by the Autosampler standard syringe.

10.2.5. Surrogates are not curved; they are spiked at the same level for all calibration points.

10.3. Verify that the instrument is properly tuned following the procedure in Appendix 20.3

10.4. (BETX) Analyze BETX calibration Samples:

10.4.1. Analyze each calibration sample using the exact conditions and procedure to be used for subsequent sample analyzes.

10.4.2. Print the initcal.rp Report" using Target™ software and evaluate each target analyte.

10.4.2.1. Verify that the automated routine has properly identified and quantified all peaks.

10.4.2.1.1. Perform any required manual integration as necessary.

10.4.2.2. Verify that the internal standard (IS) is in control.

10.5. Target™ will tabulate relative response factors (RRF), Average RRF, relative standard deviation (RSD) and % RSD using Equations 01 through 04 for each compound relative to its internal standard.

Equation 01:
$RRF = (A_X C_{IS}) / (A_{IS} C_X)$
A_X = Area of the characteristic ion for the compound being measured
A_{IS} = Area of the characteristic ion for the associated Internal Standard
C_{IS} = Concentration of the associated internal standard
C_X = Concentration of the compound being measured

Equation 02:
$Average\ RRF = \Sigma\ RRF_i / n$
where:
RRF_i = the peak response factor for each quantitation peak in the calibration standard
n = the total number of standards (usually 7)

Equation 03:	
$RSD = SD / (Ave\ RRF) =$	$\frac{\sum(RRF_i - Ave\ RRF)^2) / (n-1))^{1/2}}{Ave\ RRF}$
where:	
SD = Standard deviation of the response	

Equation 04:
%RSD = RSD * 100

10.6. Evaluate Analyte Response.

10.6.1. When the %RSD for a given target is ≤ 20%, the detector response is considered linear and the average RRF may be used to quantify that compound.

10.6.2. When %RSD is >20% for any compound, the analyst may use an alternative method to evaluate the acceptability of the calibration.

10.6.3. The curve must meet minimum RRF requirements noted in Appendix 20.2.

10.6.4. If more than 10% of the compounds included in the initial calibration exceed 20% RSD and do not meet the minimum coefficient of determination of 0.99, for alternate curve fits, the chromatographic system is considered to imprecise for analysis to begin.

10.6.5. For linear and non-linear calibration curves based on a least squares regression (LSR) model the coefficient of determination (COD) r^2 must be > 0.99.

10.6.6. Special care should be taken to monitor the RRF in the lowest calibration standard to ensure adequate sensitivity at the reporting limit. Following examination of the ICal and any corrective action, all compounds not meeting the calibration acceptance criteria must be documented on an Analysts Notes Form (8042F)

10.7. An instrument blank must be analyzed immediately following the highest point of the calibration. This blank can be used to estimate the extent of decontamination needed to eliminate carryover after analyzing a sample at similar concentration.

10.8. A secondary calibration verification (SCV) is performed by analyzing a midpoint calibration standard prepared using the SCVS. ARI will spike the full list of compounds at a mid-calibration range concentration. Calibration verification is acceptable when the recovered analytes are within ± 30% (20% for DoD analyses) of the expected concentration. Specific clients or projects may allow or require different calibration acceptance limits. When any analytes are not in the acceptable range corrective action and documentation on an Analyst Notes Form (Form 8042F) is required.

10.9. The internal standard responses and retention times in the continuing calibration standard must be evaluated during or immediately after data acquisition.

10.9.1. If the EICP area for any of the internal standards changes from -50% to +100% from the last mid-point concentration of the initial calibration, the mass spectrometer must be inspected for malfunctions and corrections must be made, as appropriate. Areas are documented in the daily run log.

10.10. If the retention time for any internal standard changes by more than 10 seconds from the last daily calibration, the chromatographic system must be inspected for malfunctions and corrections must be made, as required.

10.11. Update the analytical method file with updated RT and RRF data.

10.12. (GAS) Analyze Gas Range Organics standards using Target data analysis software.

10.13. The RSD of the gasoline curve should be ≤ 20%. Gasoline is typically very linear, and for this reason, the RSD should not exceed 20%. Other methods of evaluating linearity, as described in ARI's SOP 400S, "Gas Chromatography (GC) Analysis Procedure Method 8000", alternate curves types will not be used for Gas and GRO quantitations; however, alternate analytes (i.e. light fuels Stoddard/Mineral Spirits, JP4, Aviation Fuel, etc.) may be quantitated using other fit techniques if needed.

10.14. Surrogates are calculated from the BETX calibration and method using the Average response Factor determined from the surrogates in the BETX standard mix.

10.15. Area Summation

10.15.1. In order to determine accurate calibration factors, the total area of each standard must be correctly calculated. The total area for northwest gasoline is defined as the area sum of all the peaks detected within the range between Toluene and Naphthalene. Additional gasoline ranges (Oregon, Alaska, and California ranges are used if requested).

10.15.2. The daily retention time standard is used to determine actual retention times. The analyst should set the gas range start time 0.05 minutes before starting marker compound, and the range stop time 0.05 minutes after the ending marker compound. That way, both peaks will always be included in the gas range total.

10.15.3. Suggested Integration Parameters:

Table 8

Parameter	Setting
Initial Threshold	8.00
Initial Peak Width	0.005
Initial Area Reject	0
Shoulder Detection	OFF

10.15.4. Each peak will be integrated to baseline. Manual baselines may be required for some standards and samples in order to achieve proper integration.

10.15.5. It is frequently necessary for the analyst to adjust the integration parameters and /or perform manual integration in order to correctly integrate the GC signal. This includes, but is not limited to, splitting shoulders off of peaks, and adding or subtracting “set baseline now” events.

10.15.6. The analyst is responsible for insuring that all peaks are integrated properly. The peak should be integrated from the point where it rises up from the baseline to where it returns to the baseline. The integration should not extend to include baseline noise, nor should it “climb” up the side of the peak.

10.15.7. At no time should the integration extend above the baseline.

10.15.8. There should be no gaps in the integration. All area should be integrated.

10.15.9. Baseline rise should not be included in the area of the chromatogram. The analyst is responsible for distinguishing baseline rise from any chromatographic effects caused by the sample. If there is any doubt, overlay the chromatogram of the blank with that of the standard or sample.

10.15.10. Please refer to Manual Integration SOP 1021S for assistance with manual integrations.

10.15.11. The analyst must initial and date all raw instrument data.

10.16. The analyst notes from the Initial Calibration must be included with every job analyzed using the corresponding initial calibration.

11. Procedure

11.1. Procedure Summary

Table 04 – Procedure Summary		
Step	**Process**	**See Section**
1	Project Evaluation	11.2
2	Set or Verify Instrument Operating Parameters	11.3
3	Verify Spiking Solution in the autosampler	11.4
4	Prepare Samples for Analysis	11.5
5	Set up Analytical Run	11.6
6	Initiate sample analysis	11.7
7	Verify Instrument Tune and Calibration	11.8
8	Evaluate Mass Spectra	11.9
9	Evaluate QC Analyses	11.10
10	Export Data to Element	11.11

11.2. Project Evaluation

11.2.1. Holding times: Review project documentation to determine when sample holding time will expire. If there is any chance the sample will not be analyzed with the required holding time, notify your laboratory supervisor and/or the appropriate project manager.

11.2.2. Special requirements: Non-routine analytical requirement may be required for a specific project or sample. Review all project documentation and make sure you understand any special requirement before proceeding with analysis.

11.2.3. Historic Data may be available for a continuing project or sampling site. Use this data to pre-determine any special sample handling necessary.

11.3. Set up the GC/MS/Autosampler system as outlined in Tables 06, 07 and 08:

11.3.1. This should be done prior to the preparation of the sample to avoid loss of volatiles from prepared standards and samples.

Table 06 – Typical Instrument Operating Parameters	
Mass Spectrometer	
Mass scan range	35 – 300 amu

Scan time	1 sec/scan or less
Electron volts	70 volts (nominal)
Gas Chromatogram	
Initial Temperature	43 – 46 °C
Temperature Program	46-240°C at 12°C/min
Final temperature:	240°C, hold 4 min
Source temperature:	According to manufacturer's specs, 150-250°C
Transfer nozzle/line:	180-250°C
Carrier Gas:	Helium at 25-50 mL/min
Purge & Trap	
Purge	8-11 minutes
He flow rate	25 – 50 mL/min
Sample Heater	40 °C
Desorb preheat	250°C
Desorb	1-6 minutes at 250°C
Bake	4-10 minutes at 260°C
Valve temperature	50-110°C
Mount temperature	30-110°C
Line	50-200°C

11.4. Table 07 – Typical Autosampler Set-up - Manual Mode

Parameter	Autosampler Options	Recommended Set-up	
		Water	Soil
Flush Volume	5, 10, 15, 20 mL	10	5
Select matrix	Water or Soil	Water	Soil
Standard	Yes or No	Yes	Yes
Sample Volume	5, 10, 15, 20 mL	5 or 10	--
Dilution	0 – 95 %	0	--
Flushes	0 - 10	3	--
Stir Time	0 – 15 min	1	--
Settle Time	0 – 15 min	0	--
Stir Speed	L, M, H	M	--
Desorb Time	0 – 10 min	1	--
Flow Rate	0 – 150 mL/min	40	
Line Heat	25 – 125 °C	--	80
Pre-heat	0 – 10 min	0	0
Water Volume	0 – 10 mL	--	7
Pre-purge	0 – 10 min	0	0

Purge time	0 – 20 min	10	10
Flushes	0 - 10	--	1
Soil Stir	Yes or No	--	Yes
Desorb time	0 – 10 min	--	2
Water Trap Volume	Yes or No	--	0

11.5. Table 08 – Typical Autosampler Set-up - Auto Mode

Parameter	Options	Recommended Set-up	
		Water	Soil
Start delay	0 – 99.5 hours	0	0
Cycle time	0 – 199 min	0	24
Auxiliary output	Yes or No	No	No
Last water or soil	Vial number	1 – 30	1 - 30
Blank Last	Yes or No	No	No
Flush Volume	5, 10, 15, 20 mL	5 or 10	5
Select Matrix		Water	Soil
Standard	Yes or No	Yes	Yes
Sample Volume	5, 10, 15, 20 mL	5 or 10	--
Dilution	0 – 95 %	0	--
Flushes	0 - 10	2	--
Stir Time	0 – 15 min	1	--
Settle Time	0 – 15 min	0	--
Stir Speed	L, M, H	M	--
Desorb Time	0 – 10 min	1	--
Flow Rate	0 – 150 mL/min	40	40
Line Heat	25 – 125 °C	--	80
Pre-heat	0 – 10 min	--	0
Water Volume	0 – 10 mL	--	7
Pre-purge	0 – 10 min	0	0
Purge time	0 – 20 min	10	10
Flushes	0 - 10	--	1
Soil Stir	Yes or No	--	Yes
Desorb time	0 – 10 min	--	2
Water Trap Volume	Yes or No	--	No

11.6. Verify Spiking Solutions

11.6.1. Verify the IS / SS standard volume in the Autosampler reservoir. Add standard as necessary.

11.7. Prepare Samples for Analysis: Samples must be properly prepared for analysis using the processes outlined in Table 09.

Table 09 – Sample Preparation Procedures

Sample Matrix	Method	Technique	Details in Section:
All	Sample Screening	Sample Dilution	11.5.2
Water	5030B	Direct P&T	11.5.4
Soil	5035	Direct P & T	11.5.5
Solid	5035	Methanol Extraction	11.5.5
Soil		From Total Solids Jar	11.5.3.2
Waste	3585	Waste Dilution	11.5.5.4

11.7.1. **Prepare the Instrument:** The Purge and Trap GC-MS instrument must be readied before samples are prepared for analyses to allow minimum time lapse between preparation and analysis.

11.7.2. **Sample screening:**

11.7.2.1. Any sample with characteristics (color, odor, client information etc.) indicating it may contain high levels should be screened prior to analysis. Screening may also help prevent un-necessary contamination of the purge-and-trap system. Samples are screened by analyzing them at dilution.

11.7.2.1.1. Aqueous samples: dilute the samples with an appropriate volume of OFW and analyze as a normal sample.

11.7.2.1.2. Extract solid samples with methanol and dilute a small aliquot of the methanol into 45mL OFW for analysis.

11.7.2.1.3. A portable PID may be used to assess the sample.

11.7.3. All client samples, QA samples and standards must be spiked with surrogate (SS) and internal standards (IS) prior to analysis. The SS and IS are normally added to the sample by the auto-sampler. When samples are analyzed manually, the analyst must spike each sample individually.

11.7.4. **Aqueous Sample Preparation:**

11.7.4.1. Screen aqueous samples when historic data or their appearance indicated that they may contain high concentrations (> 2mg/L) of volatile compounds. When the screening indicates a high concentration of volatiles dilute the sample with OFW.

11.7.4.2. Aqueous samples are normally received by ARI in 45 mL VOA vials. The VOA vials are placed directly on the auto-sampler for analysis. The auto-sampler will spike surrogate and internal standard into the sample prior to the purge process.

11.7.4.3. Manual Sample Preparation: Remove the plunger from a 5mL syringe and attach a closed syringe valve. If lower detection limits are required, use a 25mL syringe. Open the sample or standard bottle, which has been allowed to come to ambient temperature, and

carefully pour the sample into the syringe barrel to just short of overflowing. Replace syringe plunger and compress the sample. Open the syringe valve and vent any residual air while adjusting the sample volume to 5.0 or 10 mL. Transfer remaining sample to a 45mL VOA vial with a Teflon™ sealed cap or fill a second syringe at this time to maintain sample integrity.

11.7.4.4. For matrix spike, matrix spike duplicate, and BS analyses, add the appropriate amount of spiking solution to the 45mL vial containing the sample to be purged to a known concentration level within the range curved.

11.7.4.5. Appropriate concentration range for analysis.

11.7.4.5.1. Use screening data, historic project information, sample appearance or other ancillary information to determine appropriate purge or dilution volumes prior to analysis.

11.7.4.5.2. The amount a sample may be diluted is determined by the purge volume and final concentration of target analytes.

11.7.4.5.3. Prepare dilutions in a 45 mL vial taking care to maintain sample integrity by keeping atmospheric exposure of the sample to a minimum

11.7.4.5.4. Add a stir bar to the 45 mL vial or leave a small pea bubble in the vial to facilitate mixing while shaking the sample.

11.7.4.5.5. Dilutions in excess of 5000X may be prepared using an intermediate Methanol (or OFW) dilution taken directly from the sample vial.

11.7.4.5.6. Always perform a final review of multiple analyses from the same sample and note any major deviations in analyte concentrations on the analyst notes Form 8042F.

11.7.4.6. Compositing samples prior to GC/MS analysis

11.7.4.6.1. The samples must be cooled at >0 to 6°C during this step to minimize volatilization losses. Combine an equal amount of each sample to be composited in a volumetric flask. Invert and shake 3 times and transfer to a sample vial or a 5mL gas tight syringe.

11.7.4.6.2. Samples composited in this fashion will be qualified in the analyst notes.

11.7.5. **Solid Samples (Soil & Sediment) Preparation:**

11.7.5.1. Screen solid samples when historic data or their appearance indicated that they may contain high concentrations (> 2mg/L) of volatile compounds. When the screening data indicates a high concentration of volatiles, use less methanol extract in the analysis.

11.7.5.2. Solids samples are normally reported on a dry weight basis. Always perform a dry weight determination (Appendix 20.8) unless the project plan requires data reported on an “as received” basis.

11.7.5.3. Methanol Extraction for medium level soil or waste samples. This method is based on extracting the sediment/soil with methanol. A waste sample is either extracted or diluted, depending on its solubility in methanol.

11.7.5.3.1. Do not discard any supernatant liquids. Mix the contents of the sample container with a narrow metal spatula. Using a top loading balance weigh 5g (wet weight) of sample into a tarred 20 mL vial. Record the actual weight to 0.1g. Determine the percent dry weight of the sample as described in Appendix 20.4. Measure 5mL of Methanol into the vial. Stir the sample Methanol mixture for 2 to 3 minutes using a vortex mixer.

11.7.5.3.2. Pipet a portion of the extract to a clean amber Teflon sealed vial for storage (limiting headspace). The remainder may be disposed. Store the extracts at >0 to 6°C in Refrigerator 25, prior to analysis.

11.7.5.3.3. After determining the required dilution, add the appropriate amount of extract to the Autosampler vial (100µL to 10µL / 5mL). To a 45 mL vial filled with OFW, add 900 µL of the sample extract for a total volume of 45 mL. Cap the vial and place it on the autosampler for analysis.

11.7.5.3.4. If a dilution is required, add less sample extract to the 45 mL vial of OFW.

11.7.5.3.5. For a matrix spike, prepare the sample as normal and then add an appropriate amount of the BS spike solution to the vial. Matrix spikes are typically spiked at the BS level. Purge and start analysis of the sample.

11.8. Set Up Analytical Run

11.8.1. Samples are analyzed in 12 hour run sequences known as QC periods. Each 12 hr QC period begins when an RT/ICV sample analysis starts and ends following the analysis of the last sample injected within 12 hours of the ICV sample injection.

11.8.2. Setup an analytical run by placing 45 mL sample vials containing either standards or client samples in the autosampler tray in the order listed in Table 09.

Table 09 – Example Analytical Run Sequence

Sample Sequence	Sample Type
1*	RT standard
2*	Initial Calibration Standard (ICV)
3	Blank Spike (BS)
4	Blank Spike Duplicate (BSD)
5	Method Blank
6 through 50	Prepared Client Samples
* These may be combined	

11.8.3. The autosamplers may run in manual or automatic mode.

11.8.4. Enter the sample identifications into the Chemstation software

11.9. Initiate Sample Analysis

11.9.1. Proceed with the analysis. Analyze all blanks on the same instrument as that used for the samples. The standards and blanks should also contain 900µL of the purge-and-trap grade MeOH to simulate the sample conditions when analyzing extracted solid samples.

11.9.2. The instrument system will transfer sample to the purge and trap sampling device and perform the GC-MS analysis automatically.

11.9.3. The analyst is responsible for assuring that the automated peak identifications and integrations are acceptable.

11.10. Verify Instrument Tune and Calibration

11.10.1. The 12 hr QC period starts with the ICV injection time and ends with the injection time of the last run inside the 12 hours. BFB and retention time (RT) standards may be combined as long as both criteria can be met.

11.10.2. Review chromatographic data to assure all peaks are identified and integrated correctly following the procedures in SOP 1021S.

11.10.3. Verify that the response of all internal standards is -50% to +100% of the compound's response in the most recent initial calibration mid-point standard.

11.10.4. The GC/MS system must be hardware tuned to meet the ion abundance criteria in Appendix 20.4 for analysis of ≤ 50 ng BFB. Analysis must not begin until all criteria have been met. Compliance with the criteria must be demonstrated prior to every calibration.

11.10.4.1. Evaluate the BFB in the following manner.

11.10.4.1.1. Acquire and average the entire peak (all scans) or three scans (the peak apex scan and the scans immediately preceding and following the apex).

11.10.4.1.2. Subtract background, this is required and must be accomplished using a single scan no more than 20 scans prior to the elution of BFB. Do not subtract part of the BFB peak.

11.10.5. Daily GC/MS calibration and initial calibration verification

11.10.5.1. An initial calibration verification standard at mid-concentration containing each compound of interest, including all required surrogates, must be performed once every 12 hours prior to sample analysis. Compare the response factor data of the standard each 12 hour shift that samples are to be analyzed against the average response factor from the initial calibration for a specific instrument.

11.10.5.2. Determine the percent drift (%D) for all analytes in the daily continuing calibration.

11.10.5.3. The calibration for all compounds with a %D ≤ 20 is acceptable.

11.10.5.3.1. Method 8260 allows up to 20% of the target analytes to be greater than 20%. If more than 20% of the analytes have %D > 20% corrective action is required prior to analysis.

11.10.5.3.2. Non-detects for compounds with >20%D may be reported when it can be demonstrated that there is adequate sensitivity to detect the compound if it were present. Such compounds must be documented on an Analysts Notes Form (Form 8042F). Any reported values must be Q-flagged.

11.11. Evaluate Mass Spectra

11.11.1. Relative intensities of major ions in the reference spectrum (ions >10% of the most abundant ion) should be present in the sample spectrum. If not, the compound may be flagged with “M” if the analyst feels the identification is real (this favors false positives).

11.11.2. The relative intensities of the major ions should generally agree with the reference spectra.

11.11.3. Molecular ions present in the reference spectrum should be present in the sample spectrum.

11.11.4. Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of co-eluting compounds.

11.11.5. Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or co-eluting peaks. Data system library reduction programs can sometimes create these discrepancies.

11.11.6. An analyte is identified by comparison of the sample mass spectrum with characteristic ions in a reference mass spectrum. The reference mass spectrum must be generated by the laboratory using the initial calibration. These standard reference spectra may be obtained through analysis of the calibration standards. The characteristic ions are defined as the three ions of greatest intensity, or any ions over 30% intensity relative to the base ion, if less than three such ions occur in the reference spectrum. Two criteria must be satisfied to verify identification: (1) elution of sample component at or near the same GC relative retention time (RRT) as the standard component; and (2) correspondence of the sample component mass spectrum and the standard component mass spectrum.

11.11.7. The intensities of the characteristic ions must maximize in the same scan or within one scan of each other. Selection of a peak by a data system target compound search routine where the search is based on the presence of a target chromatographic peak containing ions specific for the target compound at a compound-specific retention time will be accepted as meeting this criterion.

11.11.8. The sample component RRT must compare within ±0.06 units of the RRT of the standard component. For reference, the standard must be run within the same 12-hour QC period as the sample. If co-elution of interfering components prohibits accurate assignment of the sample component RRT from the total ion chromatogram, the RRT should be assigned by using extracted, ion-current profiles for ions unique to the component of interest.

11.11.9. All ions present in the standard mass spectra at a relative intensity greater than 10% (the most abundant ion in the spectrum is equal to 100% intensity) should be present in the sample spectrum.

11.11.10. The relative intensities of ions specified in Appendix 20.3 must agree within plus or minus 30% between the standard and sample spectra. (Example: For an ion with an abundance of 50% in the standard spectrum, the corresponding sample abundance must be between 20% and 80%.). If not, the compound may be flagged with an "m" if the analyst determines that the identification is valid (favors false positive).

11.11.11. Structural isomers that produce very similar mass spectra should be identified as individual isomers if they have sufficiently different GC retention times. Sufficient GC resolution is achieved if the height of the valley between two isomer peaks is less than 25% of the sum of the two peak heights. Otherwise, structural isomers are identified as isomeric pairs and reported as the sum of both compounds.

11.11.12. Identification is hampered when sample components are not resolved chromatographically and produce mass spectra containing ions contributed by more than one analyte. When gas chromatographic peaks obviously represent more than one sample component (i.e., a broadened peak with shoulder(s) or a valley between two or more maxima), appropriate selection of analyte spectra and background spectra is important. Examination of extracted ion current profiles of appropriate ions can aid in the selection of spectra, and in qualitative identification of compounds. When analytes co-elute (i.e., only one chromatographic peak is apparent), the identification criteria can be met, but each analyte spectrum will contain extraneous ions contributed by the co-eluting compound.

11.11.13. Secondary ion quantitation is allowed only if there are sample matrix interferences with the primary ion.

11.11.14. All dilution efforts should try to keep the response of the major constituents (previously saturated peaks) in the upper half of the linear range of the curve. To determine the dilution factor, compare a minor ion in the saturated analyte against the daily standard.

11.12. Evaluate the QA samples as outlined in Section 12

11.12.1. Daily GC/MS initial calibration verification, BS criteria, and the MB must demonstrate the system is free of interferences, before analyzing samples.

11.12.2. If the analysis shows the sample to have a concentration of analytes that exceed their highest standard, the sample must be rerun at a dilution. Analyst considerations for chromatographic “system overload” are analytes that are above the linear range, saturation of the mass spectrometer, chromatography overload, or analyte/interference carryover. Professional judgment must be used by the analyst as to the modification of the analytical sequence. If system contamination is present, an OFW blank must be analyzed. If the blank analysis is not free of analytes/interferences, the system should undergo maintenance, such as baking the trap or purging with methanol to decontaminate the system. If a blank is not run, as with auto-samplers, the following sample must be checked for carryover and rerun if it contains the same compounds which showed saturation. This must continue until no analyte is detected > ½ the MRL.

11.13. Export data to Element

12. Data Analysis and Calculations

12.1. Quantitative BETX analysis:

12.1.1. It is the operator’s responsibility to verify all compound identifications performed by the GC-MS data system. Use retention time, spectral data, data system calculated fit, and the operator’s expertise to determine whether analytes found by the system are real.

12.1.2. When a compound has been identified, the quantitation of that compound will be based on the integrated abundance from the EICP of the primary characteristic ion. Quantitation will take place using the internal standard technique. The internal standard used shall be the one nearest the retention time of that of a given analyte.

12.1.3. If secondary ion quantitation is necessary due to interference, then a short quantitation report list is generated. This quantitation contains the integrated areas of the affected compounds, based on the secondary ion(s) for that compound, and of the relevant internal standards. Identical reports must be generated for the sample with interference and for the relevant initial calibration verification. The report for the initial calibration verification is used to generate a relative response factor for the affected compound based on its secondary ion. This relative response factor is then used in the calculations for that compound in the affected sample. The short quantitation report may be hand calculated by the analyst as long as it is signed and dated by the analyst.

12.1.4. The concentration of each identified analyte in the sample is calculated as follows:

12.1.4.1. Aqueous samples

Concentration (µg/L) =	$\frac{(Ax)(Is)}{(Ais)(RF)(VO)}$
where:	

Ax = Area of characteristic ion for compound being measured.
Is = Amount of internal standard injected (ng)
Ais = Area of characteristic ion for the internal standard.
RF = Response factor for compound being measured.
VO =Volume of water purged (mL), taking into consideration any dilutions made.

12.1.5. Sediment /Soil, Sludge, and Waste:

12.1.5.1. High-concentration:

Concentration (µg/Kg) =	$\frac{(Ax)(Is)(Vt)}{(Ais)(RF)(Vi)(Ws)}$
where:	
Ax = Area of characteristic ion for compound being measured.	
Is = Amount of internal standard injected (ng)	
Vt = Volume of total extract (L) (use 5,000µL or a factor of this when dilutions are made).	
Ais = Area of characteristic ion for the internal standard.	
RF = Response factor for compound being measured.	
Vi = Volume of extract added (L) for purging	
Ws = Weight of sample extracted or purged (g). The wet weight or dry weight may be used depending upon the scientific applications of the data.	

12.1.6. Low-concentration

Concentration (µg/Kg) =	$\frac{(Ax)(Is)}{(Ais)(RF)(Ws)}$
where:	
Ax = Area of characteristic ion for compound being measured.	
Is = Amount of internal standard injected (ng)	
Ais = Area of characteristic ion for the internal standard.	
RF = Response factor for compound being measured.	
Ws = Weight of sample extracted or purged (g). The wet weight or dry weight may be used depending upon the scientific applications of the data.	

12.1.7. Sediment/soil samples are generally reported on a dry weight basis (sludge and wastes are also reported on a dry weight basis). In either instance, the percent dry weight of the sample should be reported along with the data.

12.2. Quantitative Gas Range Analysis

12.2.1. After the calibration curve has been analyzed, the Response Factor (RF) for each hydrocarbon range must be determined using the following formula:

RF = A / C
where:

A = Total peak area for the hydrocarbon range
C = Concentration of the hydrocarbon analyte

12.2.2. After calculating the RF for each hydrocarbon range for each calibration standard, the average RF is calculated by summating the RF for each calibration standard and dividing by the number of calibration standards. The formula is:

Average RF = Σ RF_i / n
where:
RF_i = the response factor for each hydrocarbon range in the calibration standard
N = the total number of standards (usually 6)

12.2.3. Relative Standard Deviation- The relative standard deviation of the response factors for each hydrocarbon range is determined by dividing the standard deviation of the RFs by the peak's average RF. The formula is:

$$\text{RSD} = \text{SD} / (\text{Ave RF}) = \frac{((\Sigma (RF_i - \text{Ave RF})^2) / (n-1))^{1/2}}{\text{Ave RF}}$$

12.2.4. Percent Difference- the percent difference calculations for CVSs involve dividing the difference between the CVS RF and the average RF by the average RF and converting this number to percent. The equation is:

%D = 100(Conc – Concmp) / Concmp
where:
Concc = the quantitated concentration in the CVS
Concmp = the concentration of the midpoint in the ICal (250)

12.2.5. TPH Identification- A sample is tentatively determined to contain a specific TPH analyte when the GC-FID response within a defined retention time (RT) window match the GC-FID response of a standard in the same RT window.

12.2.6. The Retention Time (RT) windows are defaulted to 0.05 minutes.

12.2.7. When samples appear to contain weathered or treated TPH, or mixtures of various TPH distillates, use of standards may not be straightforward (or technically appropriate). In such cases, the analyst must decide which TPH pattern most closely represent the range of TPH present and will quantify total TPH by quantifying the most appropriate GC-MS response range based on the analyst's knowledge and experience. Weathered patterns and complex mixtures should be noted on the Analyst Notes form.

12.2.8. All TPH surrogate peaks should show consistent RT relative to the initial calibration. Large chromatographic interferences may cause inconsistent shifting by moving some of the peaks more than others. The chromatogram of samples should be examined to ensure that false negatives aren't created by this manner of chromatographic overload.

12.3. Gas Range Organics Sample Quantitation

12.3.1. Water

Concentration (µg/L) = $\frac{(Ax)(FEV)(DF)}{(RF)(Vo)(Vi)}$
where:
A_X = Total area of the quantitation range for the analyte being measured
FEV = Final effective extract volume (mL)
RF = response factor for compound being measured
Vo = Volume of water extracted (ml)
Vi = Volume of extract injected (µL)
DF = Sample Dilution Factor (1 for undiluted samples)

12.3.2. Soil calculations involve correcting the results for both the percent moisture of the sample. Because water and methanol are miscible, the results must be corrected for the additional dilution that occurs from the water present in the sample.

12.3.2.1. The total liquid content must be calculated first.

Total liquid (TL), ml=(MeOH Amt) + ((100-%TS)) *AmtExt)
Where:
MeOH Amt is the amount of methanol added to the sample in ml
%TS is the percent total solids of the sample, or 1-% moisture
AmtExt is the amount of sample extracted in grams

12.4. The dry weight equivalent of the sample must be calculated next. This is the amount, in grams, of the sample that is actually purged.

DwtEquiv, g = {(%TS/100)*(AmtExt/TL)}*(dilExt)*(mlExt/mlV)*PV
Where:
dilExt is the factor by which the extract may have been diluted prior to injection into the autosampler vial.
ml Ext is the amount of extract injected into the autosampler vial
ml V is the volume of the autosampler vial.
PV is the purge volume in milliliters.
%TS, AmtExt and TL are defined in Section 12.1.2.1

12.5. Using the above values, the gasoline range organics (GRO) concentration of the sample may be calculated.

GRO (mg/kg) = (Range Area/RF)*(PV/DwtEquiv)
Where:
Range Area: subtracting the area of any surrogate eluting in that range.
RF is the response factor from the curve.
PV and DwtEquiv are as defined above.

12.6. Analysis records

12.6.1. Each analytical run will be recorded in the instrument run log in Element, including the vial ID and pH of each sample for aqueous samples. This log book serves as a routine maintenance log and the chain-of-custody for analyzed samples. Any change of operator must be included in the notations.

12.6.2. Soil extractions and 5035 analyses are noted on the Volatile Organics Extraction Bench Sheet 8043F, which is included with the analysis data.

12.6.3. Total solids are recorded on the Total Solids bench Sheet 5050F and included with the analysis data.

13. Method Performance

13.1. See SOP 700S Section 13

14. Pollution Prevention

14.1. See SOP 700S Section 14

15. Data Assessment and Acceptance Criteria

15.1. Requirements relating to initial and continuing calibration are detailed in Section 10 of this document.

15.2. Method Blanks- The method blank must contain less than 1/2 the reporting limit of the targeted analytes or corrective action is required.

15.3. Internal Standards- All samples' internal standard EICP areas following the continuing calibration standard must meet the technical acceptance criteria listed in Section 9.

15.4. Surrogate Recoveries

15.4.1. All method blanks, blank spike samples, matrix spikes, matrix spike duplicates, duplicates or other samples must have acceptable surrogate recoveries. Surrogate recoveries are considered unacceptable when:

15.4.1.1. Any surrogate has a recovery that is outside ARI or project specific control limits.

15.4.2. These requirements do not apply to subsequent analysis of samples where a prior analysis of the sample shows unacceptable surrogate recovery. This may demonstrate a matrix effect.

15.4.3. When mandated by contract-specific requirements, corrective actions must be performed in response to failure to meet surrogate acceptance criteria, even when we meet in house limits.

15.4.4. Surrogate recovery acceptance windows are ideally determined statistically from method and matrix specific laboratory data updated on a periodic basis. Certain methods or clients may specify project specific surrogate recovery acceptance windows.

15.4.5. Surrogate acceptance criteria are both matrix and concentration level specific (e.g. low level vs. medium level soils). When analyzing matrices or concentration levels for which no acceptance criteria are available, the closest approximation of available acceptance criteria may be provided as estimates for advisory purposes only.

15.5. Blank Spikes (BS)

15.5.1. The BS recovery values should fall within the specified recovery acceptance limits. If a BSD is performed then relative percent difference (RPD) acceptance limits may also apply, if available.

15.5.2. BS recovery acceptance windows are ideally determined statistically from method and matrix-specific laboratory data updated on a periodic basis. Project or method specific limits may supersede laboratory acceptance criteria.

15.5.3. Evaluate BS/BSD RPD and note any deviation >30% in the analyst notes.

15.6. Matrix Spike/Matrix Spike Duplicates (MS/MSD)

15.6.1. Matrix Spike/Matrix Spike Duplicate recovery values should fall within the specified recovery acceptance limits. If an MSD is performed then relative percent difference (RPD) acceptance limits may also apply, if available.

15.6.2. MS/MSD recovery and RPD acceptance is advisory and data should not necessarily be rejected based upon MS/MSD recovery. MS/MSD recovery should be compared to BS/BSD recovery to determine if recovery trends are present. Certain projects or clients may require project specific MS/MSD recovery and RPD acceptance windows.

15.6.3. Evaluate MS/MSD RPD and note any deviation >30% in the analyst notes.

15.7. Holding Times

15.7.1. Samples must be run within holding times (seven days for unpreserved water samples and fourteen days for solid samples, Methanol extracts and preserved water samples).

15.7.2. In the event that re-analysis due to an out of control event requires that samples be re-analyzed after their holding time has elapsed the analyst should analyze and report both data sets, whenever practical, distinguishing between the initial analysis and re-analysis on all deliverables. This will document that the samples were originally analyzed within holding times and may allow for comparisons that will determine whether any of the more volatile analytes were lost in the interval between analyses.

16. Corrective Actions for Out of Control Events

16.1. Corrective actions may include any, but are not limited to, the following:

16.1.1. Narration – the failure and the extent of the failure (i.e. the percent deviation from the expected value) will be described in the analyst notes.

16.1.2. Reevaluation – the data will be reconsidered by the analyst and then the analyst will corroborate with a peer analyst or supervisor to confirm or revise the initial evaluation.

16.1.3. Re-preparation – the remaining unanalyzed aliquot of the extract is transferred to a new vial and analyzed.

16.1.4. Re-analysis – if available another vial or aliquot of the sample is run on the gas chromatograph.

16.1.5. Re-extraction – a portion of the remaining sample is extracted.

16.1.6. Instrument Maintenance – this will vary with the problem experienced and the analyst's experience and a description of the maintenance performed will be documented in ELEMENT.

16.1.7. Re-calibration – a new initial calibration is evaluated and the associated samples reanalyzed.

16.1.8. Revised data submission – if it is determined through reevaluation or reanalysis that an error was made and subsequently corrected then the data will be resubmitted with the appropriate corrections and explanation for data review. Both the original and finalized data will be provided for data review.

16.1.9. Formal corrective action entry – formal corrective actions are entered into the ARI database, when an out of control event cannot be remedied through the above corrective action process.

16.2. When an Initial Calibration for an analyte exceeds 20% RSD or .990 R^2 (BETX only)

16.2.1. Examine the initial calibration analyses. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.2.1.1. When the failure appears to be the result of an improperly prepared calibration standard, re-prepare the standard and reanalyze it. Reanalyzing or replacing a single

standard must NOT be confused with the practice of discarding individual calibration results for specific target compounds in order to pick and choose a set of results that will meet the RSD or correlation criteria for the linear model. The practice of discarding individual calibration results is addressed as a fourth alternative option and is very specific as to how a set of results are chosen to be discarded. If a standard is reanalyzed, or a new standard is analyzed, then ALL of the results from the original analysis of the standard in question must be discarded. Further, the practice of running additional standards at other concentrations and then picking only those results that meet the calibration acceptance criteria is EXPRESSLY PROHIBITED, since the analyst has generated data that demonstrate that the linear model does not apply to all of the data.

16.2.1.2. If the analyte is outside 20% and is a poor performer then proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.3. When a Continuing Calibration Verification (CCV) fails.

16.3.1. Perform the appropriate corrective action(s) from Section 16.1 and re-calibrate the instrument.

16.3.2. DoD-QSM requires that %D for all analytes in the ICV or CCV be ≤ 20% (50% for end of batch CCV). For DoD analyses, if no samples have been analyzed and less than 1 hour elapsed since the failed CCV, two additional consecutive ICVs or CCVs may be analyzed. This is not required; the analyst may default to Section 16.3.1

16.3.2.1. When both of these CCVs meet acceptance criteria, samples analyzed since the last acceptable CCV may be reported and the analytical sequence continued.

16.3.2.2. If either of the two CCVs fail or their analysis cannot be started within one-hour, associated samples may not be reported and the instrument must be re-calibrated.

16.4. Internal Standards

16.4.1. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.4.1.1. If the calculations were incorrect, correct the calculations and verify that the internal standard response met their acceptance criteria.

16.4.1.2. If the internal standard compound spiking solution was improperly prepared, concentrated, or degraded, re-prepare solutions and re-extract/reanalyze the samples.

16.4.1.3. If the instrument malfunctioned, correct the instrument problem and reanalyze the sample extract. If the instrument malfunction affected the calibration, recalibrate the instrument before reanalyzing the sample extract.

16.4.1.4. If the above actions do not correct the problem, then the problem may be due to a sample "matrix effect".

16.5. Surrogates

16.5.1. Examine the bench sheet to verify spiking levels are correct.

16.5.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.5.2.1. If the above actions do not correct the problem, then the problem may be due to a sample matrix effect.

16.6. Method Blanks- Corrective action for a method blank which fails acceptance criteria may involve re-preparation of a secondary method blank and/or "B" flagging of the associated sample data. Each occurrence will be evaluated on an individual basis upon consultation with the Project Manager, the client, the Laboratory Supervisor, and the Laboratory Manager. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.7. Blank Spike Samples

16.7.1. Examine the bench sheet to verify spiking levels are correct.

16.7.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.8. Matrix Spike/Matrix Spike Duplicates

16.8.1. Examine the bench sheet to verify spiking levels are correct.

16.8.2. Recoveries are advisory and should not necessarily result in reextraction.

16.8.3. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.9. Sample Dilution- Should the quantitated value of any analyte exceed the working range of the curve, a dilution must be performed such that the analyte’s quantitated value is within the curve range.

16.9.1. All dilutions should keep the response of the major constituents in the upper half of the linear range of the curve.

16.9.2. When peaks from an analyte saturate the detector:

16.9.2.1. The analyst must flag all affected analytes with an S flag.

16.9.2.2. The analyst should evaluate samples following a saturation or over range hit to determine if carry over has occurred.

16.10. In particular circumstances, the Project Manager (PM) may decide that meeting QC limits may be of relatively little significance when considered against other project issues, such as data usability and turn-around-time. Such a decision is particularly likely when initial calibration verification responses are too high but there are no analytes identified in the samples (detection limits will not be compromised since response has improved). QC criteria specified in the work plan will be considered by the Project Manager.

16.10.1. The samples need not be re-analyzed if the PM so instructs the analyst. The analyst must have the PM approve and document all such decisions. It is preferable that the Client

be consulted, but that decision is made by the PM. (See ARI Project Management SOP #005S)

16.10.2. All QC limit issues (including initial calibration verification limits and all QC recovery limits) may be decided by the PM, the data reviewer, and/or GC Supervisor, preferably after consultation with the Client.

16.11. Mass Spectrometer Tuning

16.11.1. When the MS does not produce an acceptable mass spectrum when injected with 5 to 50 µg/mL of BFB, re-inject the BFB. If the spectrum again fails to meet the criteria found in Appendix 20.4, the MS must be re-tuned.

16.11.2. If the re-tuned mass spectrum still fails to meet the criteria found in Appendix 20.4, the GC-MS may require maintenance. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.12. Holding blanks should meet the same criteria as the method blanks detailed below.

16.12.1. Corrective action must be taken when holding blank contamination is greater than ½ the reporting limits for any analyte.

16.12.2. Holding blanks requiring corrective action must also be submitted to the QA department for further review.

17. Contingencies for Handling Out-of-Control or Unacceptable Data

17.1. See Section 16.2 for guidance on dealing with out-of-control initial calibrations.

17.2. See Section 16.3 for guidance on dealing with out-of-control initial calibration verifications.

17.3. See Section 16.4 for guidance on dealing with internal standard out-of-control events.

17.4. See Section 16.5 for guidance on dealing with surrogate out-of-control events.

17.5. See Section 16.6 for guidance on dealing with method blank related out-of-control events.

17.6. See Section 16.7 for guidance on dealing with BS/BSD related out-of-control events.

17.7. See Section 16.8 for guidance on dealing with MS/MSD related out-of-control events.

17.8. See Section 16.9 for guidance on dealing with over range samples.

17.9. See Section 16.10 for guidance on dealing with project managers.

17.10. See Section 16.11 for guidance on dealing with out-of-control tuning events.

17.11. See Section 16.12 for guidance on holding blanks.

18. Waste Management

18.1. See SOP 700S Section 18

19. Method References

19.1. "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Method 8260D Revision 4, February 2017.

19.2. USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration Revision OLM03.1, August 1994.

19.3. “Determinative Chromatographic Separations”: Method 8000C, Test Methods for Evaluating Solid Waste (SW-846), Revision 3, March 2003.

19.4. Department of Defense (DoD) Quality Systems Manual – Version 4.2 October 2010

19.5. “Sample Preparation for Volatile Organic Compounds” EPA Method 5000, Revision 0, December 1996

19.6. “Nonhalogenated Organics by Gas Chromatography: Method 8015C Revision 3, February 2007.

20. Appendices

20.1. Appendix 20.1: Quality Control Requirements

20.2. Appendix 20.2: 8260D GAS/BETX target analyte list

20.3. Appendix 20.3: BFB ion abundance criteria

20.4. Appendix 20.4: Chromatograms of Typical VOA standard

20.5. Appendix 20.5: Example page from GC/MS VOA organics logbook

20.6. Appendix 20.6: Sample Screening

20.7. Appendix 20.7: Dry weight determination

20.8. Appendix 20.8 Chromatogram of typical Gas standard

Appendix 20.1 - Method 8260D Quality Control Requirements

QC Check	Minimum Frequency	Acceptance Criteria	DoD Acceptance Criteria	Corrective Action	Flagging Criteria	Comments
Demonstrate acceptable analyst capability	Prior to using any test method and at any time there is a significant change in instrument type, personnel, or test method (see ARI SOP 1017S)	QC acceptance criteria published by DoD, if available; otherwise method specified criteria.	Same	1) Recalculate results 2) Locate and correct the source of the problem and repeat the test for all parameters of interest.	Not applicable (NA)	This is a demonstration of ability to generate acceptable accuracy and precision using four replicate analyses of a QC check sample (e.g., BS or PT sample) as described in ARI SOP 1017S. An analyst must completed a successful demonstration of capability before analyzing client samples
Method detection limit (MDL) study	At initial set-up and subsequently once per 12-month period.	See 40 CFR 136B. MDL verification checks must produce a signal at least 3 times the instrument's noise level.		Run MDL verification check at higher level and set MDL higher or reconduct MDL study	NA	Samples cannot be analyzed without a valid MDL.
Tuning	Prior to calibration	Refer to method for specific ion criteria. Option A or B see appendix 20.4	Method specific tuning criteria from 8260D option B must be used.	Retune instrument and verify. Rerun affected samples.	Flagging criteria are not appropriate	Problem must be corrected. No samples may be accepted without a valid tune.
Evaluation of relative retention times (RRT)	With each sample	RRT of each target analyte in each calibration standard within ± 0.06 RRT units of the daily CCal	DoD requires re-analysis of the ICal	Correct problem, then rerun CCal.	Flagging criteria are not appropriate.	
Minimum five-point Initial calibration for all analytes (ICAL)	Initial calibration prior to sample analysis	Option 1: RSD for each analyte ≤ 20% Option 2: linear least squares regression $r^2 > 0.99$ Option 3: non-linear regression - coefficient of determination (COD) $r^2 \geq 0.99$ (Max 10% of target analytes may fail) (6 points shall be used forsecond order)	Same	Correct problem then repeat initial calibration.	Flagging criteria are not appropriate.	Problem must be corrected. No samples may be run until ICAL has passed.
Second source calibration verification (SCV)	Once after each initial calibration	Value of second source for all analytes within ± 30% of expected value (initial source)	Value of second source for all analytes within ± 20% of expected value (initial source)	Correct problem, verify second source standard. Rerun verification. If that fails, correct problem and repeat ICal	Flagging criteria are not appropriate.	Problem must be corrected. No samples may be run until calibration has been verified.
Retention time established for all analytes and surrogates	Once per ICAL and at the beginning of the analytical shift	Position shall be set using the midpoint standard of the calibration curve or the value in the CCV run at the beginning of the analytical shift.	Same	NA	NA	

Appendix 20.1 - Method 8260D Quality Control Requirements

QC Check	Minimum Frequency	Acceptance Criteria	DoD Acceptance Criteria	Corrective Action	Flagging Criteria	Comments
Initial Calibration verification (ICV)	Daily, before sample analysis, and every 12 hours of analysis time	%Difference/Drift for all target analyes: ≤ 20%D (Note: D = difference when using RFs or drift when using least squares regression or non-linear calibration.) Up to 20% of analytes may exceed ≤ 20%D	Method specific minimum RF factors are applied	Correct problem, then rerun ICV. If that fails, repeat initial calibration.	DoD: Apply Q-flag if no sample material remains and analyte exceeds criteria. ARI: Apply Q-flag to any analytes that exceed ≤ 20%D	.
Internal standards verification	In all field samples and standards	Retention time ± 30 seconds from retention time of the midpoint standard in the ICAL EICP area within - 50% to + 100% of ICAL midpoint standard	Same	Inspect mass spectrometer and GC for malfunctions. Reanalysis of samples analyzed while system was malfunctioning is mandatory.	If corrective action fails in field samples, apply Q-flag to analytes associated with the non-compliant IS. Flagging criteria are not appropriate for failed standards.	Sample results are not acceptable without a valid IS verification.
Method blank	One per preparatory batch	No analytes detected > ½ MRL. For common laboratory contaminants, no analytes detected ≥ 5 X the MRL.	No analytes detected > ½ MRL. For common laboratory contaminants, no analytes detected > the MRL.	Correct problem, if required, reprep then reanalyze method blank and all samples processed with the contaminated blank.	Apply B-flag to all results for the specific analyte(s) in all samples in the associated preparatory batch	
Blank Spike (BS) containing all reported analytes & surrogates	One BS per preparatory batch	QC acceptance criteria specified published in ARI's LQAP.	Same unless QC acceptance criteria specified by DoD.	Correct problem, then reprep and reanalyze the BS and all samples in the associated batch, if sufficient sample material is available	If corrective action fails apply Q-flag to specific analyte(s) in all samples in the associated preparatory batch	
Matrix spike (MS)	One MS/MSD per preparatory batch per matrix when sufficient sample is available	For matrix evaluation, use QC acceptance criteria specified by for BS.	Same unless QC acceptance criteria specified by DoD.	Examine the project-specific DQOs. Contact the client as to additional measures to be taken.	For the specific analyte(s) in the parent sample, apply *-flag if acceptance criteria are not met.	For matrix evaluation only. If MS results are out of control, evaluated data to determine the source of difference and to determine if there is a matrix effect or analytical error.
Surrogate spike	All field and QC samples	QC acceptance criteria specified by DoD, if available; otherwise method-specified criteria or laboratory's own in-house criteria	Same	For QC and field samples, correct problem then reprep and reanalyze all failed samples for failed surrogates in the associated preparatory batch, if sufficient sample is available. If obvious chromatographic interference with surrogate is present, reanalysis may not be necessary.	For the specific analyte(s) in all field samples collected from the same site matrix as the parent, apply *-flag if acceptance criteria are not met. For QC samples, apply Q-flag to specific analyte(s) in all samples in the associated preparatory batch.	Alternative surrogates are recommended when there is obvious chromatographic interference.

Appendix 20.1 - Method 8260D Quality Control Requirements

QC Check	Minimum Frequency	Acceptance Criteria	DoD Acceptance Criteria	Corrective Action	Flagging Criteria	Comments
Results report-ed between LOD & MRL	NA	NA	NA	NA	Apply J-flag to all results between LOD and MRL.	

Appendix 20.2
ARI's Routine Method 8260C Target Analytes
Internal Standards, Quantitation Ions, and Calibration Criteria

BETX Internal Standard Associated Analyte[1]	CAS Number	Primary Ion	Secondary Ion(s)	Min RRF	Max %RSD	Max %D
Pentafluorobenzene (IS)[1]	363-72-4	168	99	--	--	--
D4-1,2-Dichloroethane(surrogate)	NA	65	130	--	20	20
Benzene	71-43-2	78	52, 77	0.5	20	20
Chlorobenzene-d5 (IS)	108-90-7	117	82	--	--	--
Ethylbenzene	100-41-4	91	106	0.1	20	20
m-Xylene	108-38-3,	106	91	0.1	20	20
p-Xylene	106-42-3	106	91	0.1	20	20
o-Xylene	95-47-6	106	91	0.3	20	20
4-Bromofluorobenzene(surrogate)	400-00-4	95	174	--	20	20
1,4-Difluorobenzene (IS)		114	88	--	--	--
Toluene-d8(surrogate)	108-88-3	98	100	--	20	20
Toluene	108-88-3	92	91	0.4	20	20
1,4-Dichlorobenzene-d4 (IS)	106-46-7	150	152	--	--	--
d4-1,2-Dichlorobenzene(surrogate)	95-50-1	150	152	--	20	20
Gasoline Range RT Marker Stds						
n-Butane(C4)	106-97-8	RIC	NA	NA	NA	NA
n-Pentane(C5)	109-66-0	RIC	NA	NA	NA	NA
n-Hexane(C6)	110-54-3	RIC	NA	NA	NA	NA
n-Heptane(C7)	142-82-5	RIC	NA	NA	NA	NA
n-Octane(C8)	111-65-9	RIC	NA	NA	NA	NA
n-Nonane(C9)	111-84-2	RIC	NA	NA	NA	NA
n-Decane(C10)	124-18-5	RIC	NA	NA	NA	NA
n-Undecane(C11)	1120-21-4	RIC	NA	NA	NA	NA
n-Dodecane(C12)	112-40-3	RIC	NA	NA	NA	NA
2-Methylpentane	107-83-5	RIC	NA	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	RIC	NA	NA	NA	NA
Naphthalene	91-20-3	RIC	NA	NA	NA	NA

1 – Compound designations: IS = Internal Standard, SS = Surrogate Standard

Appendix: 20.3
BFB ION ABUNDANCE CRITERIA[1]

Option A: CLP OLM04.2 criteria‡

BFB MASS INTENSITY SPECIFICATIONS (4-BROMOFLUOROBENZENE)

Mass	Intensity Required (relative abundance)
50	8 to 40% of mass 95
75	30 to 66% of mass 95
95	base peak, 100% relative abundance
96	5 to 9% of mass 95
173	less than 2% of mass 174
174	50-120% of mass 95
175	4 to 9% of mass 174
176	greater than 93% but less than 101% of mass 174
177	5 to 9% of mass 176

Option B: 8260D SUGGESTED ION ABUNDANCE CRITERIA[1]

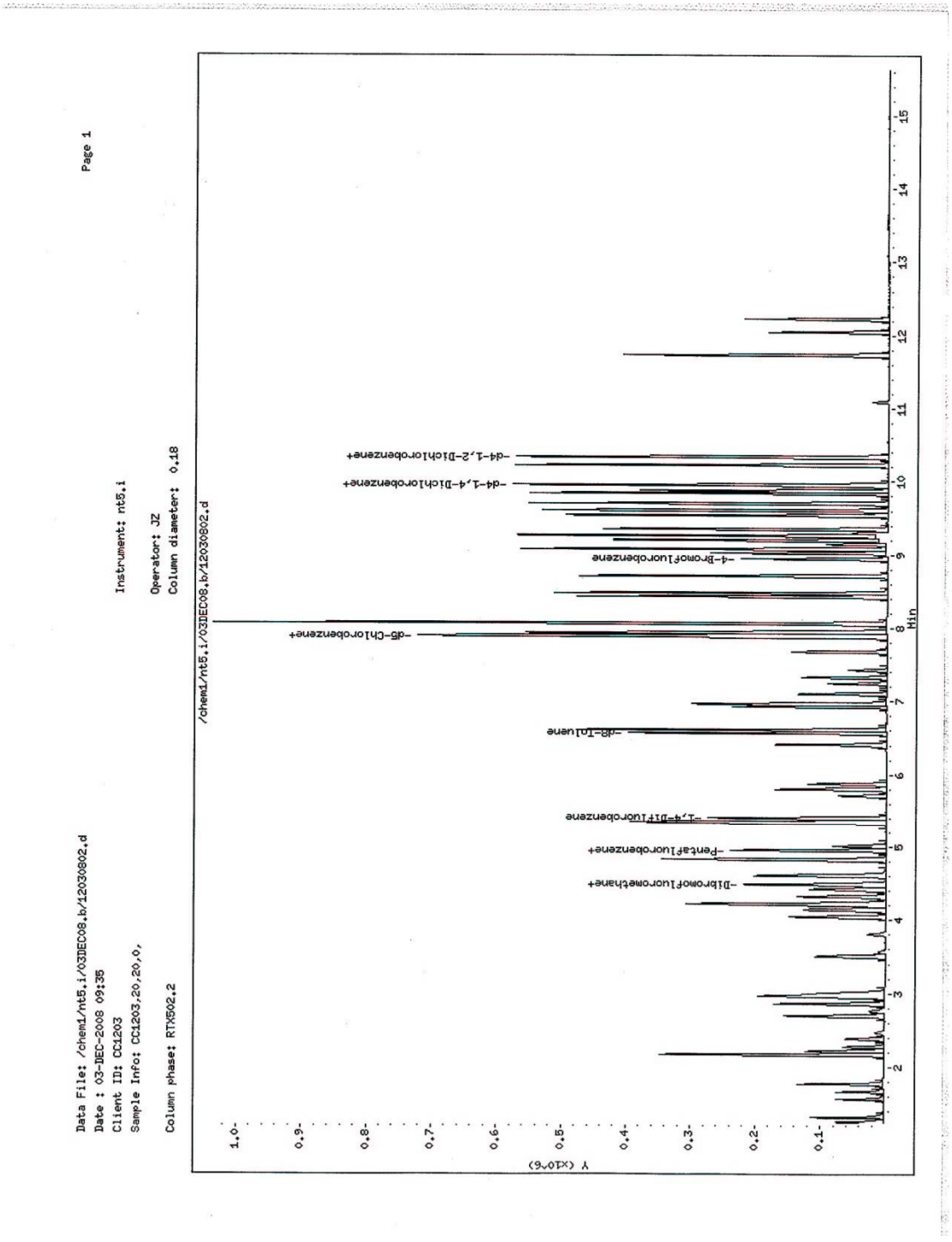
BFB MASS INTENSITY SPECIFICATIONS (4-BROMOFLUOROBENZENE)

Mass	Intensity Required (relative abundance)[2]
95	50-200% of mass 174
96	5.0 to 9.0% of mass 95[3] (5-15% when using H_2 carrier)
173	less than 2.0% of mass 174
174	50.0-200% of mass 95
175	5.0 to 9.0% of mass 174
176	95.0% -105% of mass 174
177	5.0 to 10% of mass 176

[1] Method 8260C allows the use of alternate abundance criteria, including CLP. Option B is the default option. Either set of criteria may be used without affecting data quality.
[2] Raw data is rounded to three significant figures and one or less decimal point before comparison to the abundance criteria.
[3] All ion abundances must be normalized to m/z 95, the nominal base peak, even though the ion abundances of m/z 174 may be up to 120% that of m/z 95.

20.9.

Appendix 20.4
Chromatogram of Calibration Standard



Appendix 20.5
GC/MS Volatile Organics Logbook

Analytical Resources Inc.: Organics Instrument Log
NT-3 Serial No.: 10582321978

Date:_____ Analysis: _____ Analyst: _____

GC Program: _____ Column No: _____ Column Type:_____

Instrument Tune (.U or .CT.):_____ EM Voltage: _____

Calibration File:_____ Curve Date: _____

IS/SS	Ical/Ccal	LCS/ICV

Maintenance / Comments

Maintenance Verification (Identify ICal or CCal that demonstrates the instrument is in control):

Every line must contain information or be lined out. Make all entries legible. Start a new page for each QC period.

Form 8038F NT-3 12/12/2008 Revision 001
Organic Instrument Log **Page 02499** 1/16/06

Appendix 20.6
Sample Screening

1.1. Screening of the sample prior to purge-and-trap analysis will provide guidance on whether sample dilution is necessary and will prevent contamination of the purge-and-trap system.

Aqueous Samples

Place an appropriate volume of aqueous sample in a 45 mL vial and fill the vial with organic free water (OFW). Analyze the sample as a normal sample and determine the appropriate dilution for final analysis.

Solid Samples (Soil & Sediment)

For screening soils, oils, and solid materials, place 1g of sample into a scintillation vial with 5mL VOA grade Methanol and vortex until well mixed. Dilute 100 µL of the methanol solution into 45 mL OFW. Analyze the sample as a normal sample and determine the appropriate dilution for final analysis.

Waste Samples

Water-miscible liquids are analyzed as water samples after first diluting them at least 50-fold with organic-free reagent water.

Initial and serial dilutions can be made in a 100mL volumetric flask with organic-free reagent water.

Alternatively, prepare dilutions directly in a 5mL syringe filled with organic-free reagent water by adding at least 180µL, but not more than 900µL, of liquid sample.

OVM may be used to determine approximate dilution levels.

Appendix 20.7
Dry Weight Determination

1.2. Determine the percent dry weight of the soil/sediment sample. Other wastes should be reported on a wet-weight basis.

Weigh 5-10g of the sample into a tared weighing dish.

Place the weighted sample in a 104 ± 2°C oven overnight (12 hour minimum).

Remove the sample from the oven and allow it to equilibrate to ambient temperature.

Calculate the sample per cent dry weight:

$$\% \text{ dry weight} = \frac{\text{sample weight dry (g)}}{\text{sample weight wet (g)}} \times 100$$

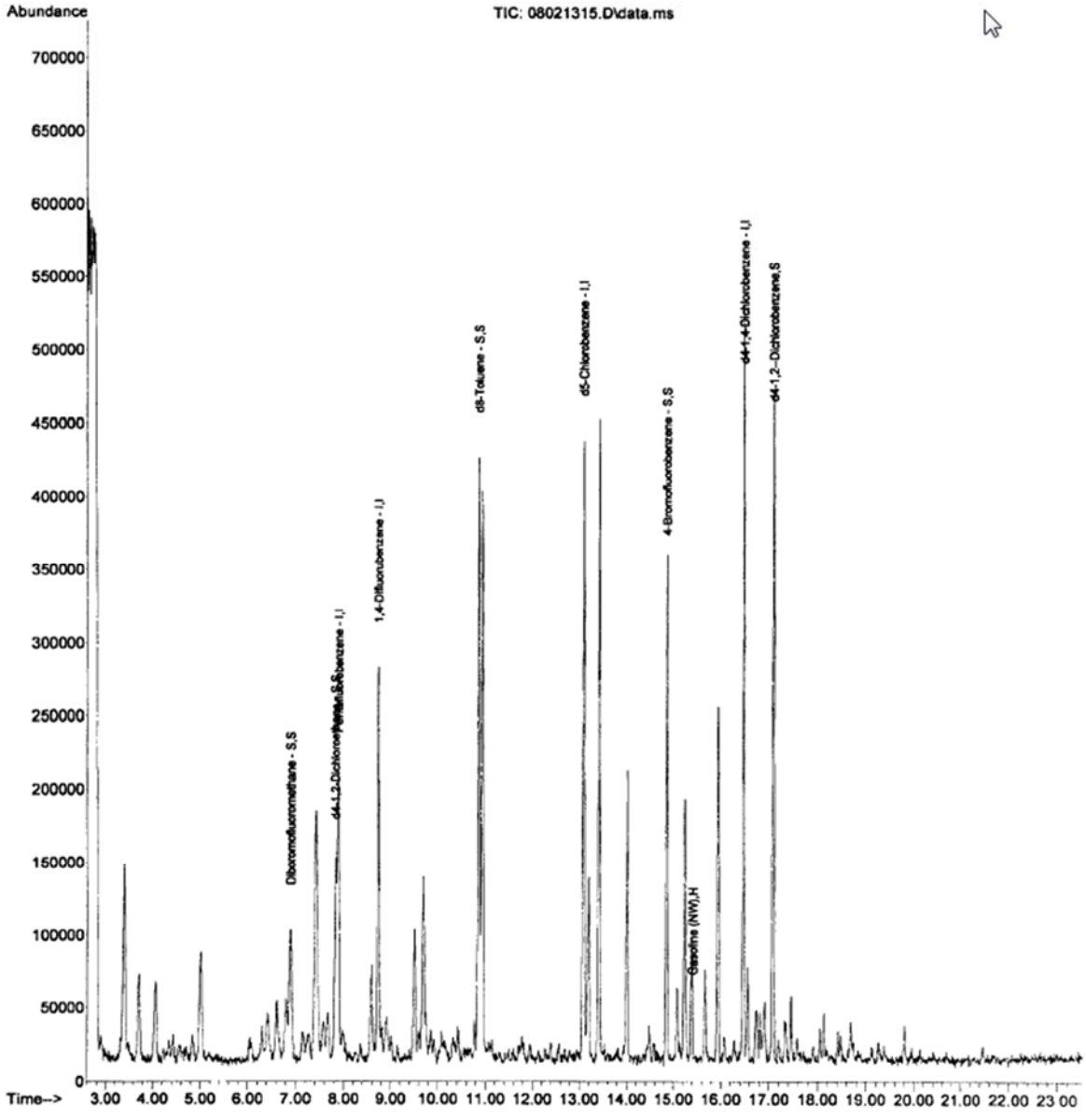
Appendix 20.8

EXAMPLE CHROMATOGRAM OF GAS CALIBRATION

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\080213\
Data File : 08021315.D
Acq On : 2 Aug 2013 9:33 pm
Operator : JZ
Sample : GASIC050802,
Misc : 13-
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 03 10:06:19 2013
Quant Method : C:\msdchem\1\METHODS\NW080213.M
Quant Title : TPHG QUANTITATION
QLast Update : Sat Aug 03 10:01:41 2013
Response via : Initial Calibration



RTCHECKJ.M Thu Aug 15 13:52:33 2013 Page: 2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

Diesel Range Organic Compounds (DRO)
Residual Range Organic Compounds (RRO)
Methods NWTPH-Dx, AK102 and AK103 and 8015C

SOP 407S
Revision 014.3

Revision Date: 12/2/16
Effective Date: 12/2/16

Prepared by:

Josh Rains, Max Litwin & Van Spohn

Approvals:

Brian N. Bebee, Laboratory Section Manager

David R. Mitchell, Quality Assurance Manager

Annual Review

SOP Number: 407S

Title: Diesel Range Petroleum DRO) Hydrocarbons Residual Range Organic (RRO) Compounds Methods NWTPH-Dx, AK102 and AK103

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

1. Scope and Application

1.1. This procedure measures the concentration of diesel range organics (DRO) and residual range organic (RRO) (motor oil) in aqueous and solid samples. The procedure includes options that meet the requirements of analytical methods listed in Table 1 and referenced in Section 19.

Table 1 – Analytical Methods

Parameter	Method	Hydrocarbon Range		Reporting Limit (PPM)	
		Beginning	End	Water mg/L	Soil mg/kg
LOW DRO	NWTPH-D	Dodecane (nC_{12})	Tetracosane (nC_{24})	0.1	5
DRO	NWTPH-D	Dodecane (nC_{12})	Tetracosane (nC_{24})	1.0	50
DRO	AK-102	Decane (nC_{10}) peak start	Pentacosane (nC_{25}) peak start	0.1	5
LOW RRO	NWTPH-Dx	Tetracosane (nC_{24})	Octatriacontane (nC_{38})	0.2	10
RRO	NWTPH-Dx	Tetracosane (nC_{24})	Octatriacontane (nC_{38})	2.0	100
RRO	AK-103	Pentacosane (nC_{25}) peak start	Hexatriacontane (nC_{36}) peak end	0.2	10
JP-4	NWTPH-D	Toluene	Tetradecane (nC_{14})	0.1	10
DRO	8015C	Decane (nC_{10})	Octacosane (nC_{28})	0.1	5
BunkerC	NWTPH-Dx	Decane (nC_{10})	Octatriacontane (nC_{38})	0.50	25
Jet-A	NWTPH-Dx	Decane (nC_{10})	Octadecane (nC_{18})	0.1	5
Kerosene	NWTPH-Dx	Toluene	Octadecane (nC18)	0.1	5
Creosote	NWTPH-Dx	Octane (nC_8)	Docosane (nC_{22})	0.1	5
Mineral Spirits (Stoddard)	NWTPH-Dx	Octane (nC_8)	Dodecane (nC_{12})	0.1	5
Mineral Oil	NWTPH-Dx	Tetracosane (nC_{24})	Octatriacontane (nC_{38})	0.2	10

1.2. This method is designed to detect the presence of diesel fuel and or motor oil in environmental samples. Other organic distillates (JP-8, hydraulic fluid, Bunker C, Creosote, Stoddard/mineral spirits, Diesel#1, Transformer oil, Mineral oil, synthetic oils, Jet A, JP4, Lube Oil, Crude, Kerosene, etc.) are also detectable under the conditions of this method. When review of the chromatogram indicates the presence of such compounds or unknown individual organic compounds, the analyst

will inform ARI's Project manager and record the observance on the reviewer checklist. These products are identified using pattern recognition techniques.

1.3. This SOP uses GC-FID to identify and quantify petroleum hydrocarbons. The method reporting limits (MRL) for this procedure are listed in Table 1

1.4. Data is generally reported on a "dry weight" basis and moisture content must be determined for all solid samples.

1.5. This procedure describes the analysis of sample extracts prepared in ARI's Organic Extractions Laboratory. This method must be used by or under the supervision of analysts experienced in the use of gas chromatography to identify and quantify organic compounds using GC-FID. The analysts must be skilled in the interpretation of gas chromatograms as quantitative tools.

2. Summary of the Procedure

2.1. This method describes gas chromatographic conditions used to detect, identify and quantify semi-volatile, solvent extractable petroleum fractions as defined in Table 1. Quantitation is performed by comparing the total FID response between method specific markers to the same response produced by a known quantity of a commercial petroleum distillate. Preparation of the commercial standard is method specific as described in Section 7. Environmental samples are extracted in ARI's Organic Extractions Laboratory and delivered to the GC laboratory for analysis.

2.2. Surrogate standards are added to a measured volume or weight of sample which is extracted using an appropriate organic solvent and extraction technique. The resulting extract is concentrated to a specified final volume. Project or Protocol required Quality Assurance Samples are prepared and analyzed using identical techniques.

2.3. A variety of cleanup steps may be applied to the extracts, depending on the nature of any co-extracted matrix interferences and the requested target analytes. All cleanup techniques must be applied to all sample extracts including QC samples (BLK, BS, MS, MRL, etc.).

2.4. Acid/Silica Gel cleanups are often used for NW Diesel.

2.5. Following any cleanup, the extract is concentrated to a designated final effective volume and delivered to ARI's Gas Chromatography Laboratory for identification and quantification of Total Petroleum Hydrocarbons.

2.6. The extract is injected onto a GC using an auto-sampler and splitless injection technique.

2.7. Analytes are detected and quantified using FID detectors.

2.8. Identified Target analytes are quantified using range quantitation as described in Section 12.

3. Definitions

3.1. Initial Calibration Verification (ICV): a process used to verify that the current instrument calibration is acceptable. Performed at the beginning of an analytical sequence.

3.2. Continuing Calibration Verification (CCV): a process used to verify that the current instrument calibration is acceptable. Performed on an ongoing basis after every 10 field samples.

3.3. Continuing Calibration Verification Standard (CCVS): A standard prepared at the mid-point concentration of the initial calibration, and prepared from the same source as the initial calibration used to perform the ICV/CCV.

3.4. DRO – Diesel Range Organic compounds.

3.5. Method Detection Limit (MDL) – The lowest result that can reliably be distinguished in a matrix from a blank.

3.6. FID (Flame Ionization Detector) – detectors sensitive to organic molecules.

3.7. Second Source Calibration Verification Standard (SCV): A mid-point concentration standard from a source different than that used for the initial calibration used to demonstrate the validity of the initial calibration. The second source standard must be purchased from a different manufacturer than the calibration standard whenever possible.

3.8. Instrument Blank (IB): A QC sample made by adding surrogates to clean solvent used to measure instrument background.

3.9. Blank Spike (BS) – A sample matrix, free from the analytes of interest, spiked with verified amounts of analyzes or a material containing known amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision or to assess the performance of all or a portion of the measurement system.

3.10. Blank Spike Duplicate (BSD) – A sample matrix, free from the analytes of interest, spiked with verified amounts of analyzes or a material containing known amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision or to assess the performance of all or a portion of the measurement system.

3.11. Matrix Spike (MS): - A sample prepared by adding a known mass of target analyte to a specified amount of sample matrix for which an independent estimate of target analyte concentration is available. Matrix spikes are used to determine the effect of the sample matrix on a method's recovery efficiency.

3.12. Element: Computer hardware and software system used to compile and report final analytical data.

3.13. Limit of Detection (LOD) – The lowest result that can be reported while meeting method precision and accuracy requirements.

3.14. Method Reporting Limit (MRL) – The lowest result that may be reported unqualified based on the lowest curve point.

3.15. Matrix Spike Duplicate (MSD): - A second replicate matrix spike prepared in the laboratory and analyzed to obtain a measure of the precision of the recovery for each analyte.

3.16. Method Blank (BLK) – A sample of a matrix similar to the batch of associated samples (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences are present at concentrations that impact the analytical results for sample analyses.

3.17. DI Water - Deionized reagent water, all references to water in this method refer to ASTM Type 1 18 megaohm organic-free reagent water.

3.18. RRO – Residual Range Organic compounds.

3.19. Surrogate – A substance with properties that mimic the analyte of interest. It is unlikely to be found in environment samples and is added to them for quality control purposes.

3.20. MRL Check (MRL) - A laboratory control spike prepared at reporting limit or MRL, used to calculate the detection limit.

3.21. Target Software - Software used to integrate and reduce raw chromatographic data.

4. Interferences - Sources of interference in this method can be grouped into three broad categories:

4.1. Contaminated solvents, reagents and/or sample processing hardware.

4.1.1. Interferences by phthalate esters introduced during sample preparation can pose a major problem. Common flexible plastics contain varying amounts of phthalate esters which are easily extracted or leached from such materials during laboratory operations. Cross-contamination of clean glassware routinely occurs when plastics are handled during extraction steps, especially when solvent-wetted surfaces are handled.

4.1.1.1. Interferences from phthalate esters can best be minimized by avoiding contact with any plastic materials and by checking all solvents and reagents for phthalate contamination.

4.1.1.2. Method interferences may be reduced by washing all glassware with hot, soapy water and then rinsing them with warm tap water, acetone, and methylene chloride.

4.1.1.3. Glassware should be baked at 400°C for a minimum of 4 hours after washing to further reduce interference problems.

4.1.1.4. High purity reagents must be used to minimize interference problems.

4.2. Contaminated GC carrier gas, parts, column surfaces and/or detector surfaces

4.2.1. Chromatographic interference

4.2.1.1. Contamination by carryover can occur whenever high-concentration and low-concentration samples are sequentially analyzed. To reduce carryover, the sample syringe must be rinsed out between samples with solvent. Whenever an unusually concentrated sample is encountered, it should be followed by the analysis of solvent to check for cross contamination (if needed).

4.3. Matrix Interferences

4.3.1.1. Bio-organics may be eliminated by Silica Gel and Acid cleanup. (EPA Method 3630 and WADOE Method).

4.3.1.2. Interferences co-extracted from the samples will vary considerably from sample to sample. While general cleanup techniques are referenced or provided as part of this method, unique samples may require additional cleanup approaches to achieve desired degrees of discrimination and quantitation.

5. Safety

5.1. The toxicity or carcinogenicity of each reagent used in this SOP has not been precisely defined. Treat each chemical compound as a potential health hazard. Reduce exposure to all chemicals to the lowest possible level by whatever means available.

5.2. Always wear appropriate PPE (personal protective equipment) when working with environmental samples and/ or organic solvents. Gloves, safety glasses, ear protection, lab coats, respirators, face shields, etc. are provided for your protection

5.3. Safety Data Sheets (SDS) that outline hazards, exposure treatments and regulatory guidelines are available for all chemicals used in this procedure and should be consulted as the need may arise. The SDS file is located in the central project management area. SDS are also available online at www.SDShazcon.com, and online via the vendor's website.

5.4. Sample extracts may contain hazardous waste; treat them as potential health hazards.

5.5. All handling of standards and samples should be done in a fume hood.

6. Equipment and Supplies

6.1. Gas chromatograph

6.1.1. Gas chromatograph - An analytical system complete with a temperature-programmable gas chromatograph suitable for splitless injection and all required accessories including:

6.1.2. Autosampler – capable of holding 1 to 100 extracts, and programmable to inject sample extracts.

6.1.3. Analytical fused-silica capillary columns - Columns used may vary depending on currently available technology (other columns may be used so long as they generate equivalent data):

6.1.3.1. Column: RTX-1, 20 m, 0.25 mm ID, 0.1 µm film (or equivalent).

6.1.3.1.1. Alternate ZB – 1, 20m, 0.25mm ID, 0.25 µm film

6.1.3.2. FID detector

6.1.4. Data system – Chemstation must be interfaced to the GC. The system must allow the recording of instrument response as a function of time.

6.1.4.1. The data must be securely stored for at least seven years from date of acquisition.

6.2. Syringes - 10 µL, 25 µL, 50 µL, 100 µL, 500 µL, 1000 µL

6.3. Balance - Analytical, 0.0001 g

6.4. Autosampler vials- 2 ml clear glass vials with PTFE lined crimp caps.

7. Reagents and Standards

7.1. All concentrated stock standards and neat compounds must be equilibrated to room temperature before they are measured or weighted. When measuring the volume of standard solutions use a syringe with capacity of about 2 times the volume being measured. When measuring less than ½ the syringe volume, choose a smaller syringe, if possible.

7.2. Surrogate Standards

7.2.1. 10mg/mL o-terphenyl Stock Solution: Accurately weighing about 0.5g of the neat surrogate compound, ortho-terphenyl, into a 50mL volumetric flask and fill it to volume with methylene chloride. The neat must be at least 97% pure or corrected for purity.

7.2.2. 10mg/mL n-triacontane Stock Solution: Accurately weighing about 0.5g of the neat surrogate compound, n-triacontane, into a 50mL volumetric flask and fill it to volume with methylene chloride. The neat must be at least 97% pure or corrected for purity. Caution: n-triacontane is difficult to dissolve in methylene chloride. The surrogate solution should be prepared at room temperature and addition of *iso*-Octane, gentle heating and/or sonication of the solution may be required to completely dissolve the n-triacontane.

7.2.3. Surrogate Spike Solution: Add 0.1125g of o-terphenyl and 0.1125g of n-triacontane to a 100mL volumetric flask and dilute to volume with methylene chloride. The Surrogate Spike Solution will contain o-terphenyl and n-triacontane at 1125µg/mL

7.3. Calibration Standard

7.3.1. Prepare a Diesel Calibration Solution containing commercial Diesel #2 at 2500µg/mL and o-Terphenyl at 450µg/mL using methylene chloride. Also used for AK102.

7.3.2. Prepare a Motor Oil Range Calibration Solution containing commercial SAE 30 weight motor oil at 5000µg/mL and n-triacontane at 450µg/mL using methylene chloride. Verify you are using SAE 30 weight and not SAE 10-30 weight.

7.3.3. For AK103 Prepare a Motor Oil Range Calibration solution containing commercial SAE 30 and 40 weight motor oil (1:1) at 5000µg/mL and n-triacontane at 450µg/mL using methylene chloride.

7.4. Initial Calibration Verification Standards

7.4.1. A secondary source standard prepared in the same manner as the Calibration Standard. The second source standard must be purchased from a different manufacturer than the calibration standard whenever possible.

7.5. Continuing Calibration Verification Standards

7.5.1. Prepare by diluting a diesel or motor oil calibration solution 1:5.

7.6. Diesel Spike Solution

7.6.1. Prepare a diesel spike solution of containing Diesel # 2 at 15,000µg/ml in Acetone.

7.6.2. AK102/103 spike solution contains Diesel#2, SAE 30 and 40 weight motor oil at a total concentration of 7500ug/ml in Acetone.

7.7. Retention Time Standard (RT)

7.7.1. A retention time standard contains the even carbon number alkanes from n-C_8 to n-C_{40}, plus Toluene, n-C_{25} at varying concentrations, and 112.5µg/mL of each surrogate (o -terphenyl & n-triacontane) in methylene chloride.

7.8. Instrument Blank

7.8.1. An instrument blank contains o-terphenyl and n-triacontane at 112.5µg/mL each in methylene chloride.

8. Sample Collection, Preservation, Shipment, Storage, Holding time and Disposal.

8.1. Samples must be collected in an appropriate container, transported to ARI and stored under custody at >0 to 6 °C.

8.2. Samples must be stored at ARI, at >0 to 6 °C until final disposal.

8.3. Samples must be extracted within holding times determined from the day of sampling. The standard holding time for water samples is seven days. The standard holding time for solid samples is 14 days.

8.4. Solid and sediment samples may be stored at -10°C to -20°C to extend the holding time to one year.

8.5. Extracts are delivered to Refrigerator 15 in the instrument laboratory by extractions technicians.

8.5.1. Analysts in the instrument lab will assume custody of the sample extracts, reassign the location in Element to refrigerator 17 and begin the analysis.

8.5.2. Extracts must be stored at >0 to 6 °C and protected from light.

8.5.3. Extracts must be analyzed within 40 days of extraction initiation.

8.5.4. Extracts must be stored in the location assigned in Element.

8.5.5. Extracts may be disposed 40 days after the analysis has been completed.

8.5.6. Extracts will be disposed in the large blue barrel in the satellite accumulation area designated for extract vials. Disposed extracts are now marked in Element as disposed.

9. Quality Control

9.1. Surrogates

9.1.1. Surrogates are compounds chemically similar to the targeted analytes, but not expected to be found in environmental samples used to evaluate extraction efficiency by measuring recovery. Surrogates are added to every sample analyzed.

9.2. Method Blanks

9.2.1. A method blank is a volume of a clean reference matrix (DI for water samples, or purified solid matrix for soil/sediment samples) that is carried through the entire analytical procedure. The volume or weight of the reference matrix must be approximately equal to the volume or weight of samples associated with the blank. The purpose of a method blank is to determine the levels of contamination associated with the processing and analysis of samples.

9.2.2. Method blank extraction and analysis are performed as follows:

9.2.2.1. Whenever samples from different jobs are extracted by the same procedure up to 20 samples may be batched together with the same method blank.

9.2.2.2. Every 20 field samples, excluding matrix spike/matrix spike duplicates, that are of a similar matrix (water, soil/sediment) or similar concentration (soil/sediment only) would constitute a separate analytical batch.

9.2.2.3. Method blanks must be analyzed on each GC system used to analyze associated samples if mandated by project-specific requirements. Otherwise a single analysis of the method blank is sufficient. If instrument caused contamination is suspected, the method blank should be reanalyzed to determine if this is so.

9.2.2.4. Each method blank must contain all surrogates used for sample extracts.

9.3. Blank Spikes

9.3.1. To evaluate the accuracy of the analytical method independent of matrix-related effects, a matrix-specific blank spike (BS) must be included in each preparation batch.

9.3.2. A BS is a volume of clean reference matrix (DI for water samples, or sodium sulfate for soil/sediment samples) that is carried through the entire analytical procedure. The BS must contain all surrogates required by the method. Typically, the BS (and BSD when applicable) is spiked with Diesel for NWTPH-Dx and Diesel + Motor Oil for AK102 / AK103.

9.3.3. In instances where insufficient sample volumes exist to perform an MS/MSD analysis, an BS/BSD may be used to assess the precision of the analytical method. The BS Duplicate is prepared and analyzed identically to the BS.

9.3.4. BS samples should be prepared at the same frequency as method blanks (every 20 field samples of the same matrix prepared at the same time by the same method.)

9.3.5. BS (and BSD) samples must contain all surrogates used for sample extracts.

9.3.6. The RPDs between the BS and BSD must be measured and reported.

9.3.7. Evaluate the BS/BSD RPD and note any deviation >30% in the reviewer checklist.

9.4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

9.4.1. To evaluate the effects of the sample matrix on the methods used for TPH analyses a sample per batch is prepared in triplicate (one un-spiked sample, and the spiked MS/MSD set.)

9.4.2. A matrix spike and matrix spike duplicate must be extracted and analyzed for every 20 field samples of a similar matrix or whenever samples are extracted by the same procedure at the same time.

9.4.3. As part of a client's QA/QC program, water rinsate samples and/or field/trip blanks (field QC) may accompany soil/sediment samples and/or water samples that are delivered to the laboratory for analysis. The laboratory will not perform MS/MSD analysis on any of the field QC samples.

9.4.4. If a client designates a sample to be used as an MS/MSD, then that sample must be used.

9.4.5. If there is insufficient sample remaining in any of the samples to perform an MS/MSD, the laboratory shall immediately contact the client to inform them of the situation. The client will either approve that no MS/MSD is required, require that a reduced sample aliquot be used for the MS/MSD analysis or request that a BS/BSD (See Section 9.3.3) analysis be performed. The laboratory shall document the decision in the case narrative.

9.4.6. Dilution of MS/MSD extracts to get either spiked compounds or native analytes on scale is not necessary.

9.4.7. The RPDs between the MS and MSD must be measured and reported.

9.4.8. Evaluate the MS/MSD RPD and note any deviation >30% in the reviewer checklist.

9.5. Statistical Control- Internal quality control limits for analyte spike and surrogate recoveries and relative percent difference for matrix spike and matrix spike duplicates are statistically generated on a periodic basis.

9.5.1. These quality control limits are provided to bench chemists, managers, and QA staff as tools for assessing data quality in real-time at the point of data generation.

9.5.2. Practical considerations relating to their dynamic nature require their presentation in a document separate from this SOP. Current control limits may be found on the ARI Intranet.

9.5.3. All analysts using this SOP must use it in conjunction with Control Limit documentation in order to assess data quality and any possible need for corrective actions.

9.6. Initial Demonstration of Proficiency- Each analyst must demonstrate initial proficiency with each sample preparation and determinative method combination performed, by generating data of acceptable accuracy and precision for target analytes in a clean matrix. The laboratory must also repeat these procedures whenever new staff is trained or significant changes in instrumentation are made. Review EPA Methods 8000C and 3500 for information on how to accomplish this demonstration.

10. Calibration and Standardization

10.1. The GC-FID instrument is calibrated in the diesel range using 6 standards and in the residual range using 5 or 6 standards. A minimum of 5 points is required for all DRO and RRO calibration curves. The curves must have a %RSD of less than 20%. The AK102/103 curves must have a %RSD of less than 20%. The average calibration factor is used to quantify detected analytes.

10.1.1. Calibration range will be 50 - 2500 µg/mL for diesel range. Using the diesel range stock prepared above, individually prepare the calibration standards at concentrations of 50, 100, 250, 500, 1000 and 2500 µg/mL in methylene chloride. The calibration range for motor oil range will be 100 – 5000 µg/mL. Individually prepare the residual range stock to concentrations of 100, 250, 500, 1000, 2500 and 5000 µg/mL.

10.1.2. The lowest concentration calibration standard analyzed during the initial calibration establishes the reporting limit, adjusted for the final volume of the extract and amount of sample extracted, for that compound.

10.2. Specific hydrocarbon ranges requested by the client may be calibrated using either a single or a multi-point calibration. ARI maintains a library of chromatograms to aid in identification of various hydrocarbon distillates.

10.3. The reviewer checklist from the Initial Calibration must be included with every job run under the corresponding initial calibration.

10.4. Sequences are always started with an alkane (retention time) standard containing the even carbon number alkanes from n-C_8 to n-C_{40}, plus Toluene, n-C_{25}, and the surrogates o -terphenyl and n-triacontane, then an instrument blank. Curves are then run for any analyte requiring a new calibration, and calibration verification standards are run to validate the appropriate curves from a previous run(s).

10.4.1. The alkane standard analyzed at the beginning of each sequence is used to determine actual retention times for the various alkane ranges, and the retention time are updated in the method every 24 hours.

10.4.2. A new macro version is generated and saved every time the macro is updated with both calibration factors and calibration dates. The analyst must be extremely careful when entering values in the macro, and must double check each modified macro for accuracy and completeness prior to using it.

10.4.3. Once the macro is updated, it will calculate and report both total area and concentration for each defined range. Surrogate areas are automatically subtracted from the diesel and motor oil range total. The surrogate area values being subtracted are reported in the macro so it can be easily verified.

10.4.4. The analyst enters each range concentration into ELEMENT. ELEMENT then incorporates the sample amount, final extract volume, and dilution factor to calculate the final concentration of the sample.

10.5. Initial and Continuing Calibration Standards (ICV/CCV) must be run at the start and end of a run sequence and after every 10 field sample injections within the sequence. Calibration factors for each CCV must be within 15% D (25% D for AK102/103) of the average calibration factor of the working curves. If a CCV fails to meet the 15% D (25% D for AK102/103) limit and corrective action does not resolve the problem, a new curve must be generated for that analyte.

10.6. A sequence may continue as long as the CCV is within 15%D (25% D for AK102/103) of the average calibration factor from the curve and no more than 24 hours have elapsed since analysis of the last Retention Time Standard (Section 9). When evaluating the CCV for a specific project only the relevant ranges must meet QC limits for the run to continue and the data to be valid. For example, if motor oil range CCV failed, it would not affect the data for a project requesting diesel range only.

10.7. Each day continuing calibration standards must be evaluated to determine if the calibration is still valid. The analyst should evaluate peaks and responses and examine the standard chromatogram for evidence of leaks or other problems with the instrument.

10.8. The GC lab accepts custody of sample extracts when they are signed into the GC sample log book designated for the fuels refrigerator and the extract custody is then the responsibility of the GC laboratory. Extracts are subsequently signed out of Refrigerator 15 by an analyst who assumes custody of the extracts until they are signed back into the refrigerator or into archive.

10.9. See Corrective Action Section 9.0 for any deviations from this procedure.

Table 2: Method ICal Acceptance Criteria

Analytical Method	Ical RSD	ICV %D	CCV
NWTPH-D	≤ 20%	≤ 15%	≤ 15%

AK-102	≤ 20%	≤ 25%	≤ 25%
8015C	≤ 20%	≤ 15%	≤ 15%

10.10. Suggested Integration Parameters:

Table 4: Typical Integration Parameters	
Parameter	**Setting**
Initial Start Threshold	1.00
Initial End Threshold	1.00
Initial Area Threshold	25000.00
Initial P-P Resolution	1.00
Initial Bunch Factor	5
Initial Negative Peaks	OFF
Initial Tension	10

10.11. Each peak will be integrated to baseline, by the Falcon Integration Parameters. Manual baselines may be required for some standards and samples to achieve proper integration. See SOP 1021 for guidance on manual integration.

10.12. Calibration Verification

10.12.1. Calibration verification standards (ICV/CCV) are standards run at the beginning and end of each sequence, after every 10 field samples or fewer.

10.12.2. The percent drift (%D) of the CCV must be within 15% of the true value for Method NWTPH-D and 8015C, and within ±25% for Method AK-102 & AK103. See ARI SOP 400S, "Gas Chromatography (GC) Analysis Procedure Method 8000C," for %D calculation.

10.12.3. If the response for a CCV goes high, that is, the calculated concentration is > 115% (125% for AK-102 or AK-103) of the expected value, but the analyte was undetected in the samples affected by the CCV, the samples do not need to be re-analyzed. The fact that the CCV is high indicates that if the analyte is present, it would have been detected. This is not the case for a CCV that fails <85%.

10.12.4. If a CCV fails to meet criteria a second CCV may be run, if the second CCV passes and the bracket reported then both CCVs need to be noted in the Reviewer checklist.

10.12.5. If an analyte is present in the sample above the linear range of the curve, the sample must be run at a dilution with the analyte within the calibration range, with acceptable CCVs and ideally near the CCV concentration.

11. Procedure

11.1. Sample Screening: It is highly recommended that all samples suspected of containing high concentrations of fuels, be screened prior to analysis, as they may contain high enough concentrations of petroleum products to overload the column and/or the detectors.

11.2. Gas Chromatograph Analysis:

11.2.1. Prior to using this method, the samples should be prepared for chromatography using the appropriate sample preparation and cleanup methods.

11.2.2. Set the GC operating conditions so that Toluene is distinguished from the solvent peak, target compounds do not co-elute and there is minimal column bleed. Suggested GC operating conditions are listed in Table 4 (samples must be run using the same instrument conditions as the initial calibration).

Table 4: Typical GC Operating Conditions	
Initial temperature:	35°C, hold for 2 minutes
Temperature program:	35 - 165°C at 35C°/min
	165 -250°C at 30C°/min
	250 -350°C at 20C°/min
Final temperature:	330°C, hold for 2 minutes
Injector temperature:	300°C
Detector temperatures:	350°C
Detector make-up gas flows	40 mL/min
Column flow	2.5 mL/min
Injector:	Grob-type, splitless injection
Injector Pulse	15 psi at 0.45 minutes
Split flow	Not Applicable
Sample volume:	1 µL
Carrier gas:	Hydrogen

11.2.3. If a new analysis sequence is being started, verify the calibration curve by analysis of the ICV.

11.2.4. Calculate the percent difference between the ICV/CCV response factor and the average calibration factor from the curve (as in section 6.8). Percent difference should be < 15% for NWTPH-D and 8015C and < 25% for AK-102 & AK103.

11.2.4.1. Rinses before CCVs are not allowed unless rinses are placed before all injections in the analytical sequence.

11.2.5. An instrument blank must be run in every sequence to determine the area generated from normal baseline noise under the conditions prevailing within the 24-hour period. This laboratory QC sample is integrated over the DRO and/or RRO area in the same manner as samples. The concentration of target analytes must be less than the ½ MRL. If not, instrument maintenance must be performed to remove contamination from the chromatographic system.

11.2.6. A Retention Time (RT) standard must be run every 24-hour period at the start of each analytical sequence.

11.2.6.1. Retention time ranges are defined by adding or subtracting 0.05 minutes from the apex of the peak for the designated hydrocarbon marker.

11.2.6.2. The Target method used to identify the range markers is then updated with the revised RT window data.

11.2.6.3. Deviation from the 24-hour period must be noted in the Reviewer checklist.

11.2.7. Sample extracts are introduced into the instrument in the same manner as the calibration standards.

11.2.8. Each method blank and blank spike should be run as closely as possible to the sample batch to which they are associated. That way, the results for these blanks will more accurately reflect the condition of the samples at the time of analysis.

11.2.9. Whenever a sample with a high concentration of target analytes is analyzed, the potential for carryover exists. If possible, the analyst should analyze a blank following the analysis of "dirty" samples.

11.2.10. If no blank was analyzed, the following samples should be examined for evidence of carryover. If carryover appears to be a problem, the samples should be re-analyzed.

11.2.11. When the sample cannot be re-extracted due to insufficient volume, notify the Project Manager. Report the sample as analyzed and explain why it was not re-extracted on the Reviewer checklist form.

11.2.12. When sample concentrations exceed the limits of the initial calibration, dilute the extract and re-analyze. Samples must be diluted so that all target analyte peaks are on scale.

11.2.13. Matrix spikes and matrix spike duplicates do not require dilution.

11.2.14. A CCV must be analyzed after every 10 field samples. A CCV must, also, be analyzed at the end of each sequence.

11.2.15. All samples should be bracketed by CCVs that meet the criteria in Section 10.6.

11.2.16. When a CCV fails, all affected samples (those samples run after the last passing CCV) must be re-analyzed.

11.2.17. A sequence may continue as long as the CCVs meet the criteria in Section 10.6.

12. Data Analysis and Calculations

12.1. After the calibration curve has been analyzed, the Response Factor (RF) for each hydrocarbon range must be determined using the following formula:

$RF = A / C$
where:
A = Total peak area for the hydrocarbon range
C = Concentration of the hydrocarbon analyte

12.2. After calculating the RF for each hydrocarbon range for each calibration standard, the average RF is calculated by summating the RF for each calibration standard and dividing by the number of calibration standards. The formula is:

$\text{Average RF} = \Sigma RF_i / n$
where:
RF_i = the response factor for each hydrocarbon range in the calibration standard
N = the total number of standards (usually 6)

12.3. Relative Standard Deviation- The relative standard deviation of the response factors for each hydrocarbon range is determined by dividing the standard deviation of the RFs by the peak's average RF. The formula is:

$$RSD = SD / (Ave\ RF) = \frac{((\Sigma (RF_i - Ave\ RF)^2) / (n-1))^{1/2}}{Ave\ RF}$$

12.4. Percent Difference- the percent difference calculations for CCVs involve dividing the difference between the CCV RF and the average RF by the average RF and converting this number to percent. The equation is:

$\%D = 100(Conc - Concmp) / Concmp$
where:
Concc = the quantitated concentration in the CCV

Concmp = the concentration of the midpoint in the ICal (250)

12.5. TPH Identification- A sample is tentatively determined to contain a specific TPH analyte when the GC-FID response within a defined retention time (RT) window match the GC-FID response of a standard in the same RT window.

12.5.1. The Retention Time (RT) windows are defaulted to 0.05 minutes as discussed in Section 11.2.6.

12.5.2. When samples appear to contain weathered or treated TPH, or mixtures of various TPH distillates, use of standards may not be straightforward (or technically appropriate). In such cases, the analyst must decide which TPH pattern most closely represent the range of TPH present and will quantify total TPH by quantifying the most appropriate GC-FID response range based on the analyst's knowledge and experience. Weathered patterns and complex mixtures should be noted on the Reviewer checklist form.

12.5.3. All TPH surrogate peaks should show consistent RT relative to the initial calibration. Large chromatographic interferences may cause inconsistent shifting by moving some of the peaks more than others. The chromatogram of samples should be examined to ensure that false negatives aren't created by this manner of chromatographic overload.

12.6. Sample Quantitation

12.6.1. Water

Concentration (µg/L) = $\frac{(Ax)(FEV)(DF)}{(RF)(Vo)(Vi)}$
where:
A_X = Total area of the quantitation range for the analyte being measured
FEV = Final effective extract volume (mL)
RF = response factor for compound being measured
Vo = Volume of water extracted (ml)
Vi = Volume of extract injected (µL)
DF = Sample Dilution Factor (1 for undiluted samples)

12.6.2. Sediment/Soil/Sludge (on a dry weight basis) and Waste (normally on a wet weight basis)

Concentration (µg/kg) = $\frac{(Ax)(FEV)(DF)}{(RF)(Vi)(Ws)(DW)}$
where:
A_X = Total area of the quantitation range for the analyte being measured
FEV = Final effective extract volume (mL)

DF = Sample Dilution Factor (1 for undiluted samples)
RF = response factor for compound being measured
Vi = Volume of extract injected (µL)
Ws = Weight of sample extracted in grams
DW = % Dry weight of sample

13. Method Performance

13.1. The QA department measures method performance using a combination of continuing MRL studies, quarterly Verification standards, performance evaluation samples, standard reference materials, and the monitoring of surrogate and spike recoveries.

13.1.1. Detection limits- the LOD for all analytes quantitated using this SOP are set using the low point of the initial calibration curve and validated by MRL studies.

13.1.2. MRL studies are performed each quarter for each analyte by each preparatory and analytical method.

13.1.3. LOD and MRL values may be found for each analyte on the ARI's Web Site

13.2. Laboratory precision and bias measurements are performed by monitoring surrogate and spike recoveries in samples and quality control samples.

13.2.1. Control limits are calculated from these recoveries.

13.2.2. These control limits are disseminated to the bench chemists and ELEMENT administrator for use in monitoring method performance in real time.

13.2.3. As these limits are updated regularly, their dynamic nature prevents their inclusion in this SOP. However, they may be found on the ARI's Web Site.

13.3. Method performance must be re-evaluated every time there is a change in instrument type, personnel or method. Method performance will be demonstrated using the Demonstration of Capability (DOC) procedure described in Appendix 2.2 of ARI SOP 1017S. A certification statement and all raw data from the DOC will be forwarded to QA for approval and archive. Each DOC must be documented in the instrument maintenance logbook.

13.4. This method should be performed only by experienced GC analysts, or under the close supervision of such analysts.

14. Pollution Prevention

14.1. All GC split vents will be connected to an exhaust vent.

14.2. All syringe rinses are discharged into activated charcoal. Spent charcoal is properly disposed of as "Solvent Contaminated Solids" by ARI's designated Treatment, Storage and Disposal Facility.

14.3. Disposed expired standards into the designated barrel in the hazardous waste room.

14.4. Autosampler vials containing sample extracts are placed in the satellite accumulation station in the GC store room for eventual removal by an EPA approved Treatment, Storage and Disposal Facility.

15. Data Assessment and Acceptance Criteria for Quality Control Measures

15.1. Requirements relating to initial and continuing calibration are detailed in Section 10 of this document.

15.2. Requirements for Method Blanks are detailed in Section 9.

15.3. Internal Standards- All samples' internal standard peak areas must meet the technical acceptance criteria listed in Section 9 of this SOP.

15.4. Surrogate Recoveries

15.4.1. All method blanks, blank spikes, matrix spikes, matrix spike duplicates, sample duplicates, or other samples must have acceptable surrogate standard recoveries. Surrogate recoveries are acceptable when they are within ARI's statistically generated control limits or limits set by client specific limits.

15.4.2. Any surrogate recovery that is "out-of-control" required that a corrective action be initiated.

15.4.2.1. These requirements do not apply to subsequent dilutions of samples where a prior analysis of the diluted sample extract shows acceptable surrogate recovery.

15.4.2.2. When mandated by contract-specific requirements, corrective actions must be performed for unacceptable surrogate recovery even when the criteria are labeled as advisory in the reference method.

15.4.3. Surrogate acceptance criteria are matrix specific. When analyzing matrices or concentration levels for which no acceptance criteria are available, the closest approximation of available acceptance criteria may be provided as estimates for advisory purposes only.

15.5. Blank Spike Samples

15.5.1. Blank spike (BS) recovery must fall within specified recovery acceptance limits or corrective action is required.

15.5.1.1. BS recovery acceptance criteria are determined statistically from historic laboratory data. Criteria specified by client specific requirements may supersede ARI's historic values.

15.5.1.2. When mandated by a particular quality system or contract-specific requirements corrective actions is required in response to unacceptable BS criteria, even when the criteria are labeled as advisory in the reference method.

15.5.2. When an BSD is analyzed, relative percent difference (RPD) acceptance limits also apply, if specified by contract or quality system.

15.5.3. The RPD between spiked analyte concentrations in an BS and an BSD should be < 30%. If the RPD exceeds 30% this must be noted in the reviewer checklist.

15.6. Matrix Spike/Matrix Spike Duplicates (MS/MSD)

15.6.1. MS spike recoveries are advisory and should not be used to reject batch data.

15.6.2. Spike acceptance criteria are matrix specific. When analyzing for which no specific acceptance criteria are available, the closest approximation of available acceptance criteria may be used for advisory purposes only.

15.6.3. When an MSD is analyzed, relative percent difference (RPD) acceptance limits also apply, if specified by contract or quality system.

15.6.3.1. The RPD between spiked analyte concentrations in an MS / MSD should be 30%. If the RPD exceed 30% this must be noted in the reviewer checklist.

15.7. Holding Times

15.7.1. Samples should be extracted within the sample holding time (7days for waters and 14 days for soils) and extracts should be analyzed within 40 days from the initial date of extraction.

15.7.2. In the event that re-analysis due to an out of control event requires that samples be re-analyzed after their holding time has elapsed (7 days for water and 14 days for solids) the analyst should analyze and report both data sets, whenever practical, distinguishing between the initial analysis and re-analysis on all deliverables. This will document that the samples were originally run within holding times and may allow for comparisons that will determine whether data quality was affected by the samples being analyzed out of holding.

15.7.3. If any samples extracts are analyzed after the 40-day holding time has elapsed, the analyst shall document this in the analytical notes accompanying the data so that it may be included in the narrative.

16. Corrective Actions for Out of Control Events

16.1. Corrective actions may include any, but are not limited to, the following:

16.1.1. Narration – the failure and the extent of the failure (i.e. the percent deviation from the expected value) will be described in the reviewer checklist.

16.1.2. Reevaluation – the data will be reconsidered by the analyst and then the analyst will corroborate with a peer analyst or supervisor to confirm or revise the initial evaluation.

16.1.3. Re-preparation – the remaining unanalyzed aliquot of the extract is transferred to a new vial and analyzed.

16.1.4. Reanalysis – the extract aliquot that was originally prepared is reinjected and run on the gas chromatograph again.

16.1.5. Re-extraction – a re-extraction request is filled out (Form 0030F). Copies of the form are provided to the extractions department, the project manager, the QA manager and the lab manager. The remaining sample is extracted.

16.1.6. Instrument Maintenance – this will vary with the problem experienced and the analyst's experience and a description of the maintenance performed will be documented in ELEMENT.

16.1.7. Recalibration – a new initial calibration is evaluated, and the associated samples reanalyzed.

16.1.8. Revised data submission – if it is determined through reevaluation or reanalysis that an error was made and subsequently corrected then the data will be resubmitted with the appropriate corrections and explanation for data review. Both the original and finalized data will be provided for data review.

16.1.9. Formal corrective action entry – formal corrective actions are entered into the ARI database, when an out of control event cannot be remedied through the above corrective action process.

16.2. When an Initial Calibration Verification (ICV) RSD for an analyte exceeds the method requirement.

16.2.1. Examine the initial calibration analyses. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.2.1.1. When the failure appears to be the result of an improperly prepared calibration standard, re-prepare the standard and reanalyze it. Reanalyzing or replacing a single standard must NOT be confused with the practice of discarding individual calibration results for specific target compounds in order to pick and choose a set of results that will meet the RSD or correlation criteria for the linear model. The practice of discarding individual calibration results is addressed as a fourth alternative option, and is very specific as to how a set of results are chosen to be discarded. If a standard is reanalyzed, or a new standard is analyzed, then ALL of the results from the original analysis of the standard in question must be discarded. Further, the practice of running additional standards at other concentrations and then picking only those results that meet the calibration acceptance criteria is expressly prohibited, since the analyst has generated data that demonstrate that the linear model does not apply to all the data.

16.3. When an Initial or Continuing Calibration Verification (ICV or CCV) fails:

16.3.1. Perform the appropriate corrective action(s) from Section 16.1 and re-calibrate the instrument.

16.3.2. DoD-QSM requires that %D for all analytes in the ICV or CCV be ≤ 20% (50% for end of batch CCV). For DoD analyses, if no samples have been analyzed and less than 1 hour elapsed since the failed CCV, two additional consecutive ICVs or CCVs may be analyzed. This is not required; the analyst may default to Section 16.3.1.

16.3.2.1. When both CCVs meet acceptance criteria, samples analyzed since the last acceptable CCV may be reported and the analytical sequence continued.

16.3.2.2. If either of the two CCVs fail or their analysis cannot be started within one hour, associated samples may not be reported and the instrument must be re-calibrated.

16.4. Surrogates

16.4.1. Examine the bench sheet to verify spiking levels are correct.

16.4.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.4.2.1. If the above actions do not correct the problem, then the problem may be due to a sample matrix effect.

16.5. Method Blanks- Corrective action for a method blank which fails acceptance criteria may involve re-extraction and reanalysis of all associated samples and/or "B" flagging of the associated sample data. Each occurrence will be evaluated on an individual basis upon consultation with the Project Manager, the client, the Laboratory Supervisor, and the Laboratory Manager. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.6. Blank Spikes

16.6.1. Examine the bench sheet to verify spiking levels are correct.

16.6.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.7. Matrix Spike/Matrix Spike Duplicates

16.7.1. Examine the bench sheet to verify spiking levels are correct.

16.7.2. Recoveries are advisory and should not necessarily result in re-extraction.

16.7.3. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.8. Sample Dilution- Should the quantitated value of any analyte exceed the working range of the curve, a dilution must be performed such that the analyte's quantitated value is within the curve range.

16.8.1. All dilutions should keep the response of the major constituents near the midpoint of the linear range of the curve.

16.8.2. When peaks from an analyte saturate the detector:

16.8.2.1. The analyst should analyze an Instrument Blank consisting of clean solvent until the system has been decontaminated.

16.9. In particular circumstances, the Project Manager (PM) may decide that meeting QC limits may be of relatively little significance when considered against other project issues, such as data usability and turn-around-time. Such a decision is particularly likely when continuing calibration responses are too high but there are no analytes identified in the samples (detection limits will not be compromised since response has improved). QC criteria specified in the work plan will be considered by the Project Manager.

16.9.1. The samples need not be re-analyzed if the PM so instructs the analyst. The analyst should have the PM initial all such decisions. It is preferable that the Client be consulted, but that decision is made by the PM. (See ARI Project Management SOP #005S)

16.9.2. All QC limit issues (including continuing calibration limits and all QC recovery limits) may be decided by the PM, the data reviewer, and/or GC Supervisor, preferably after consultation with the Client.

16.10. If contaminants (including target and non-target compounds) continue to cause significant interference, even after all relevant cleanups have been performed; the sample should be re-extracted at a level appropriate to the amount of contamination. The re-extraction level should be based on the initial analysis. The experience and discretion of the analyst and section supervisor will be relied upon for re-extraction decisions. The PM will be notified if re-extraction at a different level is required.

17. Contingencies for Handling Out-of-Control or Unacceptable Data

17.1. See Sections 16.2 and 16.3 for guidance on dealing with initial and continuing calibration out-of-control events.

17.2. See Section 16.4 for guidance on dealing with surrogate out-of-control events.

17.3. See Section 16.5 for guidance on dealing with method blank related out-of-control events.

17.4. See Section 16.6 for guidance on dealing with blank spike related out-of-control events.

17.5. See Section 16.7 for guidance on dealing with MS/MSD related out-of-control events.

17.6. See Section 16.8 for guidance on dealing with over range related out-of-control events.

18. Waste Management

18.1. All extract vials must be disposed of by placing them in the blue hazardous waste drum in the lab set aside for this purpose. No vials may be thrown in the trash or receptacles not expressly designated for this purpose.

18.2. All solvents must be disposed of by pouring them out over charcoal. No solvent may be poured down the drain or disposed of in any other non-hygienic manner.

18.3. All spent charcoal must be disposed of by placing it in the charcoal disposal bin located in the extractions lab.

18.4. Waste must not be accumulated in the fume hoods and must be disposed of at the appropriate waste disposal location.

19. Method References

19.1. Alaska Laboratory Method for the Analysis of Diesel Range Organics (AK102), published in Appendix D of State of Alaska Department of Environmental Conservation, Contaminated Sites Program, Underground Storage Tanks Procedures Manual, April 8, 2002.

19.2. Alaska Laboratory Method for the Analysis of Residual Range Organics (AK103), published in Appendix D of State of Alaska Department of Environmental Conservation, Contaminated Sites Program, Underground Storage Tanks Procedures Manual, March 1,1999.

19.3. Washington State Department of Ecology, "Analytical Methods for Petroleum Hydrocarbons", Publication No ECY97-602, "NWTPH-Dx – Semivolatile Petroleum Products Method for Soil and Water, June, 1997

19.4. This SOP incorporates guidelines from U.S. EPA, "Test Methods for Evaluating Solid Waste" (SW-846), and Method 8000C, Revision 3, March 2003.

19.5. Department of Defense, Quality Systems Manual for Environmental Laboratories, Final Version 4.2, 10/25/2010

19.6. EPA Method 8015C, "Non-Halogenated Organics by Gas Chromatography", Revision 3, February 2007

20. Appendices

20.1. TPH Quality Control Requirements

20.2. Chromatogram Library of Common Petroleum Products

Appendix 20.1: In House Quality Control Requirements

QC Requirement	Minimum Frequency	ARI Acceptance Criteria	DoD-QSM Acceptance	Corrective Action	Flagging Criteria
Demonstration of capability (DOC). DOC requirements are outlined in ARI SOP 1017S.	Prior to using any test method and at any time there is a significant change in instrument type, personnel, or test method.	ARI spike recovery QA limits	Same	Recalculate results; locate and fix problem, then rerun demonstration for those analytes that did not meet criteria.	Not applicable (NA)
Quantitation Limit Spike (MRL) study	At initial set-up and run continuously; and quarterly MRL verification checks shall be performed.	See 40 CFR 136B. MRL verification checks must produce a signal at least 3 times the instrument's noise level.	Same	Run MRL verification check at higher level and set LOD higher or re-conduct study.	NA
Retention time (RT) window width for each analyte and surrogate	At method set-up and after major maintenance (e.g., column change)	ARI uses a default retention time window of 0.5 minutes	Same.	NA	NA
Minimum five-point Initial calibration for all analytes (ICAL)	Initial calibration prior to sample analysis	One of the options below: Option 1: RSD for each analyte ≤ 20% Option 2: non-linear regression: coefficient of determination (COD) r2 ≥ 0.99 (6 points required)	Same	Correct problem then repeat initial calibration.	Flagging criteria are not appropriate.
Second source initial calibration verification (SCV)	Once after each initial calibration	Value of second source for all analytes within ± 30% of expected value (initial source)	Same	Correct problem and verify second source standard. Rerun second source verification. If that fails, correct problem and repeat initial calibration.	Flagging criteria are not appropriate.

QC Requirement	Minimum Frequency	ARI Acceptance Criteria	DoD-QSM Acceptance	Corrective Action	Flagging Criteria
Retention time window position established for each analyte and surrogate	Once per ICAL and at the beginning of the analytical shift	Position shall be set using the midpoint standard of the calibration curve or the value in the CCV run at the beginning of the analytical shift.	Same	NA	NA
Retention time Window verification for each analyte and surrogate	Each calibration verification standard	Analyte within established window	Same	Correct problem, then reanalyze all samples analyzed since the last acceptable retention time check. If they fail, redo ICAL and reset retention time window.	Flagging criteria are not appropriate for initial verification.
Calibration verification continuing [CCV]	CCV: After every 10 field samples and at the end of the analysis sequence	All analytes within ± 15% of expected value from the ICAL	Same	CCV: Correct problem then repeat CCV and reanalyze all samples since last successful calibration verification.	CCV:. Flagging criteria are not appropriate.
Method blank	One per preparatory batch	No analytes detected	Same	Correct problem, then see criteria in box D-5; if required, reprep then reanalyze method blank and all samples processed with the contaminated blank.	Apply B-flag to all results for the specific analyte(s) in all samples in the associated preparatory batch
Blank Spike (BS) containing all analytes and surrogates to be reported	One BS per preparatory batch	ARI BS control limits	Same	Correct problem, then reprep and reanalyze the BS and all samples in the associated preparatory batch, if sufficient sample material is available.	If corrective action fails and there is insufficient sample material report and discuss in the case narrative.
Matrix spike (MS)	One MS per preparatory batch per matrix.	ARI MS control limits	Same	Examine the project-specific DQOs. Contact the client as to additional measures to be taken.	For the specific analyte(s) in the parent sample, apply J-qualifier if acceptance criteria are not met.

QC Requirement	Minimum Frequency	ARI Acceptance Criteria	DoD-QSM Acceptance	Corrective Action	Flagging Criteria
Matrix spike duplicate (MSD) or sample duplicate	One per preparatory batch per matrix	ARI BS control limits	Same	Examine the project-specific DQOs. Contact the client as to additional measures to be taken.	For the specific analyte(s) in the parent sample, apply J-qualifier if acceptance criteria are not met.
Surrogate spike	All field and QC samples	ARI control limits	Same	For QC and field samples, correct problem then reprep and reanalyze all failed samples for failed surrogates in the associated preparatory batch, if sufficient sample material is available. If obvious chromatographic interference with surrogate is present, reanalysis may not be necessary.	For the specific analyte(s) in all field samples collected from the same site matrix as the parent, apply J-qualifier if acceptance criteria are not met.
Confirmation of positive results (second column or second detector)	All positive results must be confirmed.		Same	NA	Apply J-qualifier if RPD > 40% Discuss in the case narrative.
Results reported between LOD and MRL	NA		NA	NA	Apply J-qualifier to all results between LOD and MRL.

20.3 Chromatogram Library of Common Petroleum Products

20.3.1 Diesel

20.3.2 Motor Oil

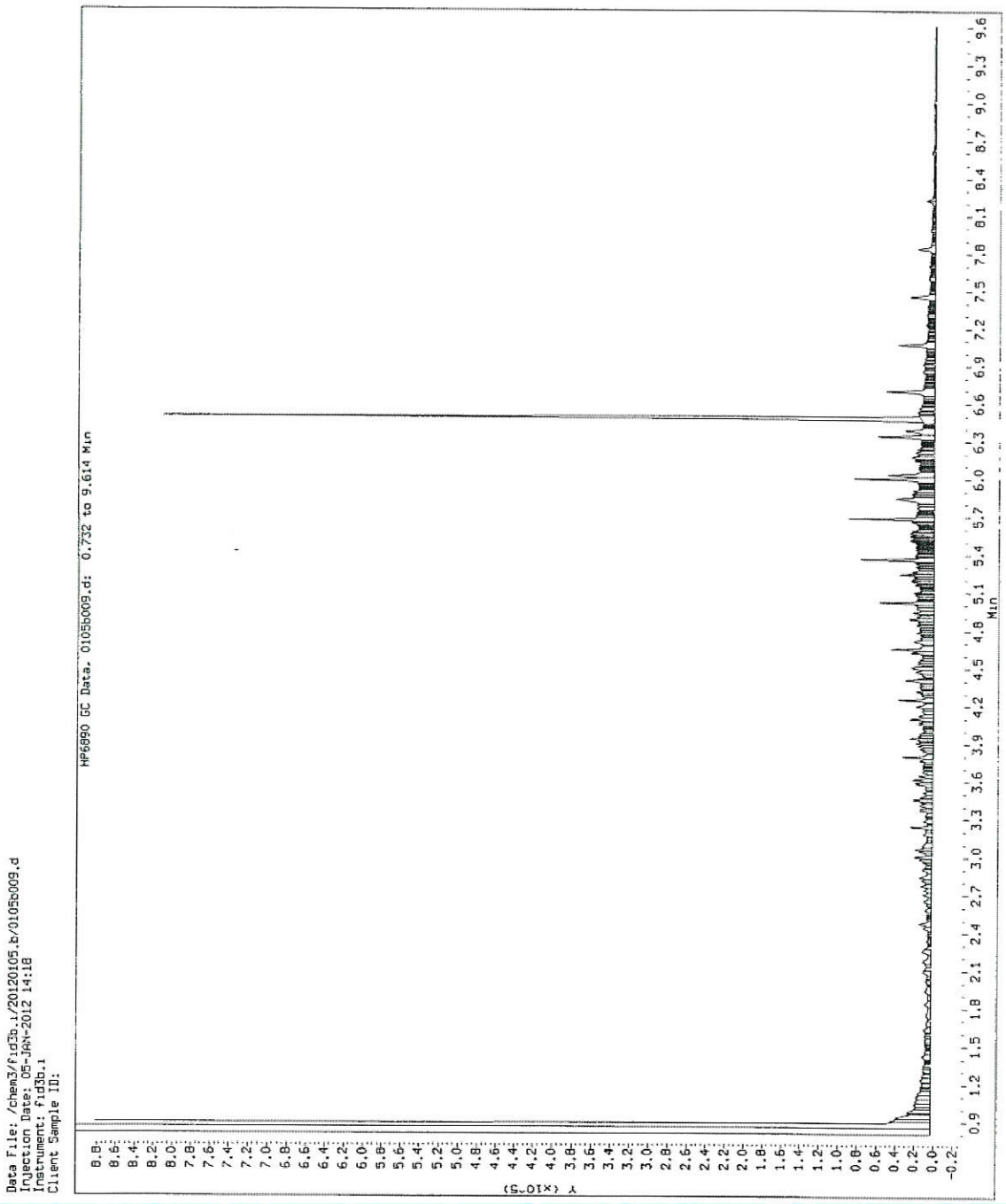
20.3.3 AK103 (30/40Wt Mix)

20.3.4 JetA

20.3.5 Gas/Diesel Mix

20.3.6 BunkerC

Diesel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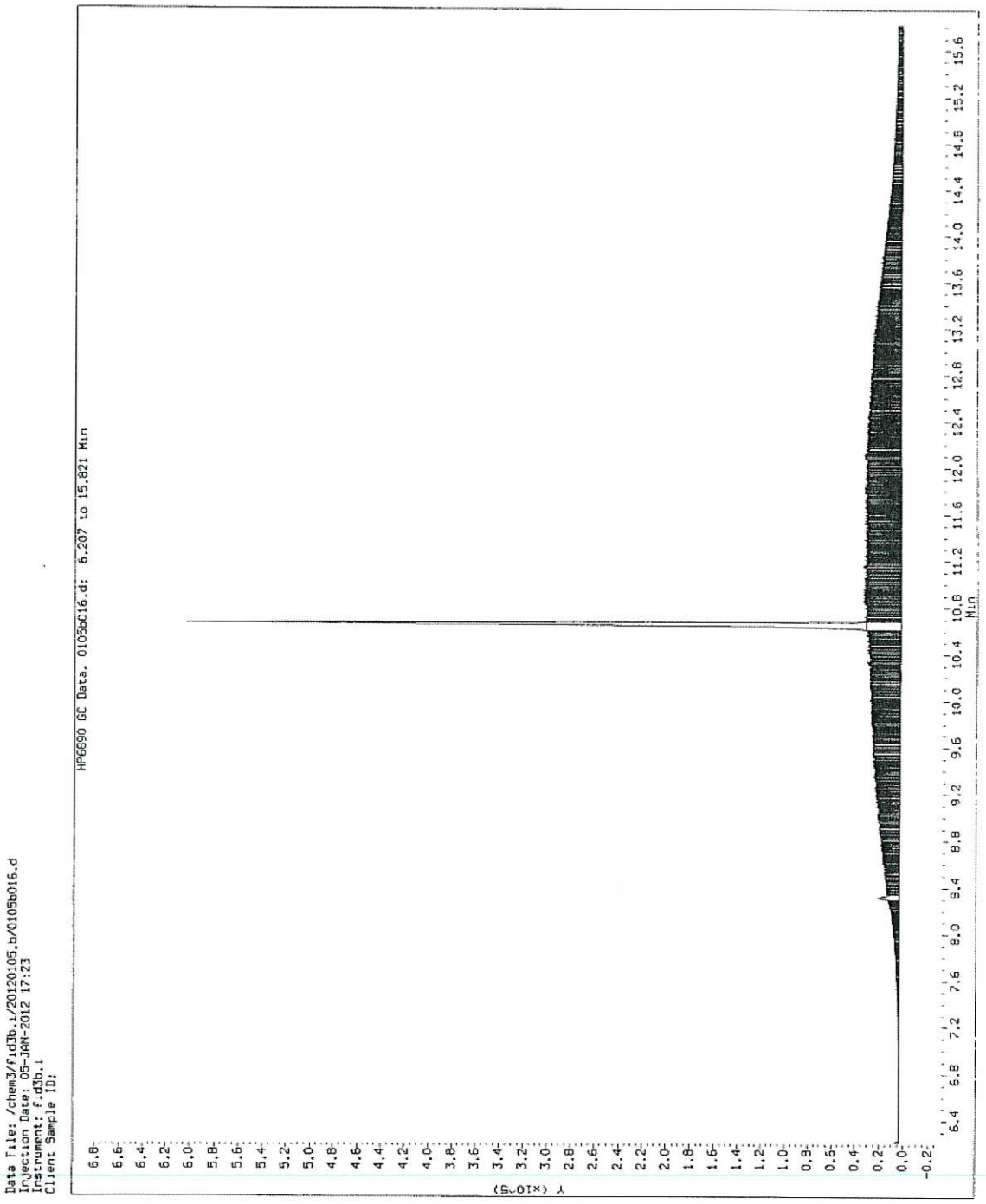
Injection Date: 05-JAN-2012 14:18
Instrument: fid3b.i
Client Sample ID:
HP6890 GC Data. 0105b009.d: 0.732 to 9.614 Min
Y (X10^5)
Min

Motor Oil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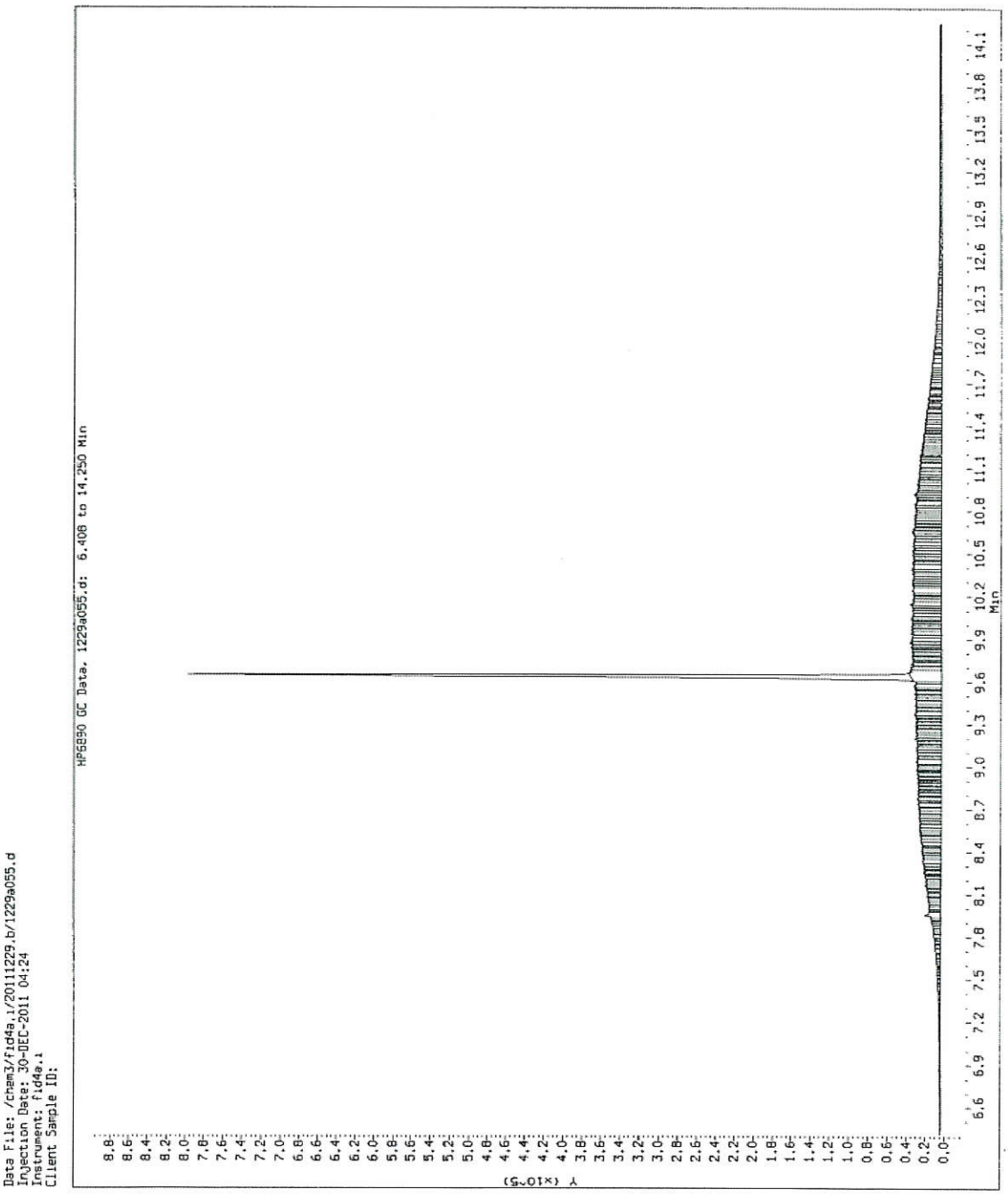
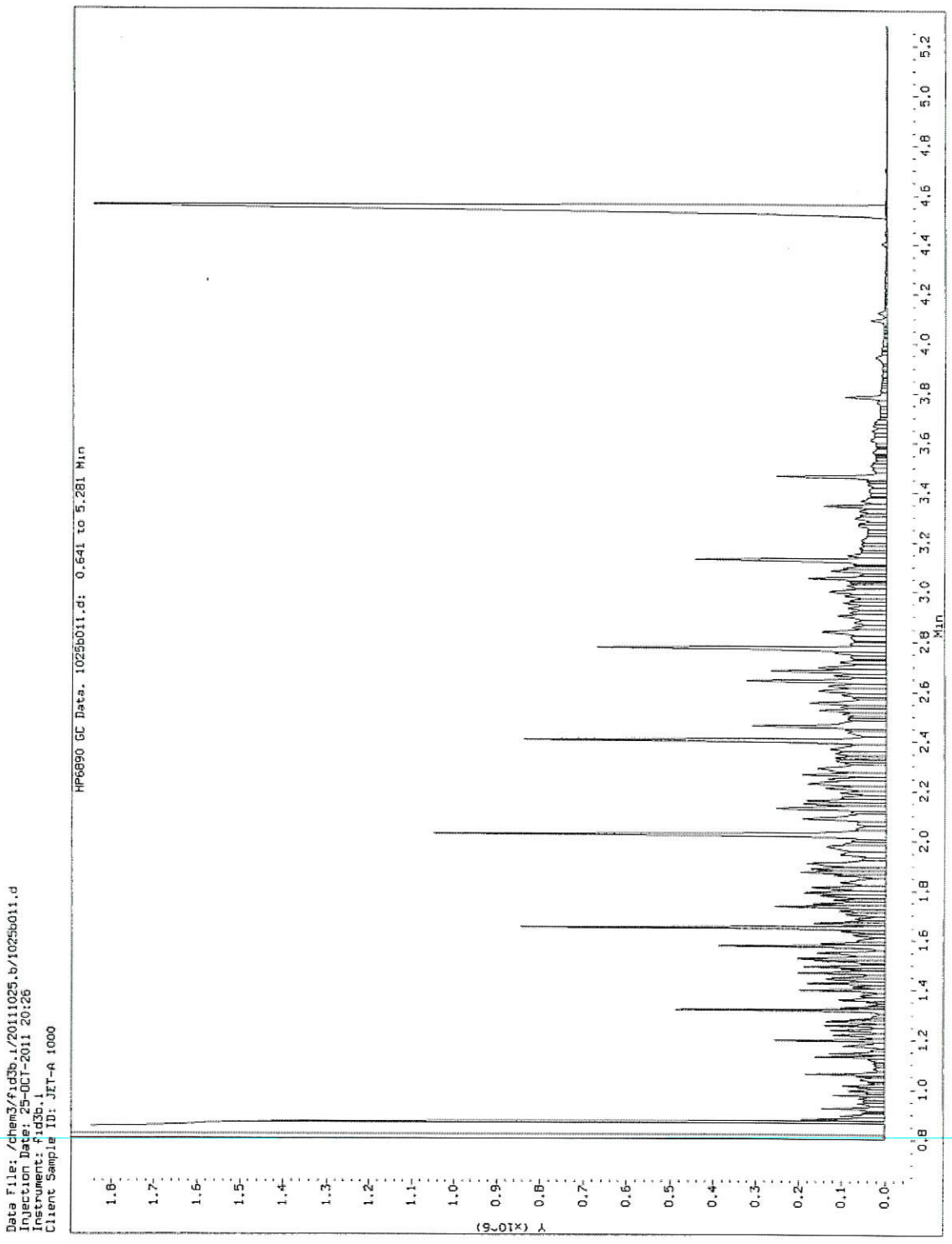
Injection Date: 05-JAN-2012 17:23
Instrument: fid3b.i
Client Sample ID:
HP6890 GC Data, 0105b016.d: 6.207 to 15.821 Min
Y (x10^-5)
Min

AK103 (30/40 Wt Mix)



Jet A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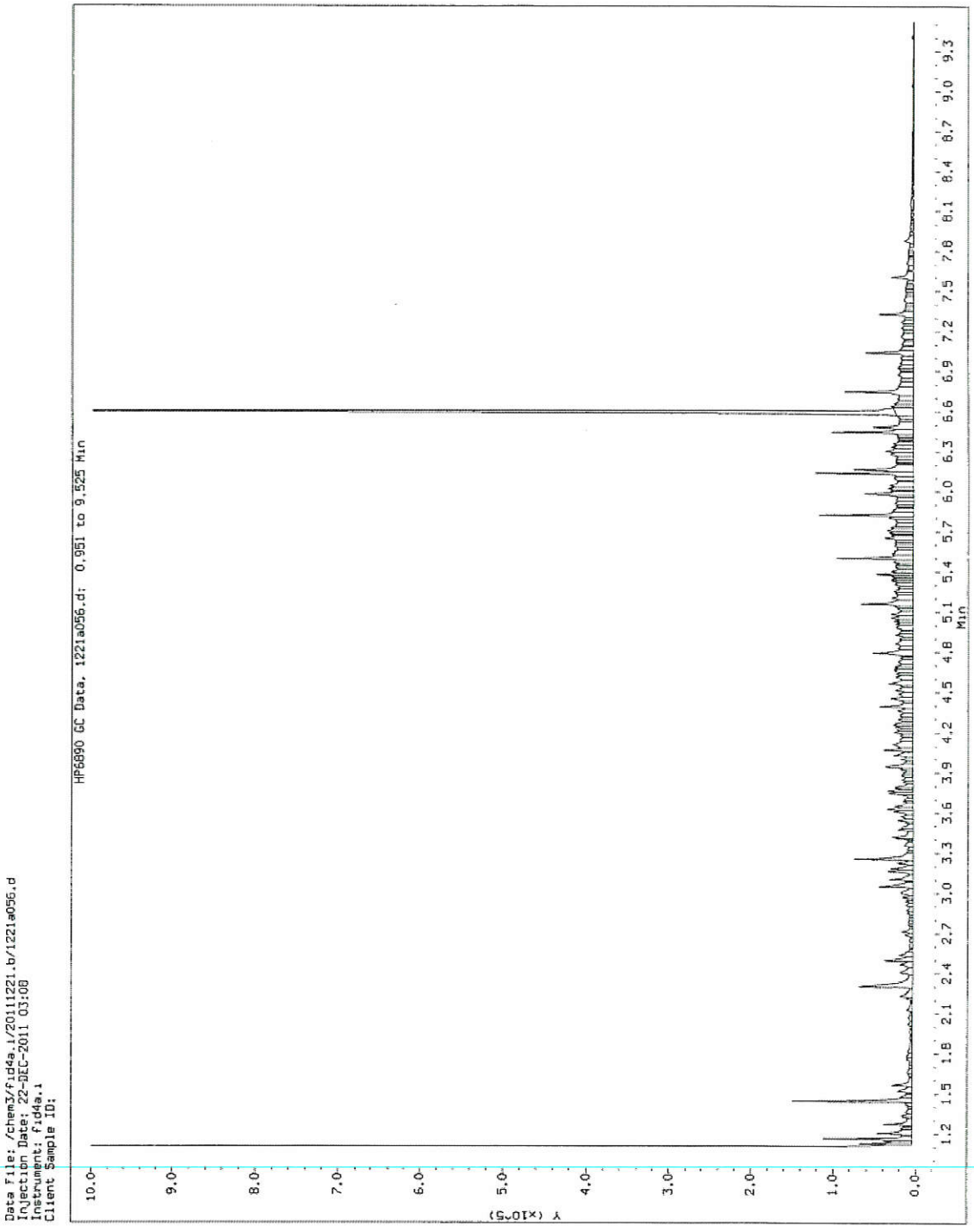
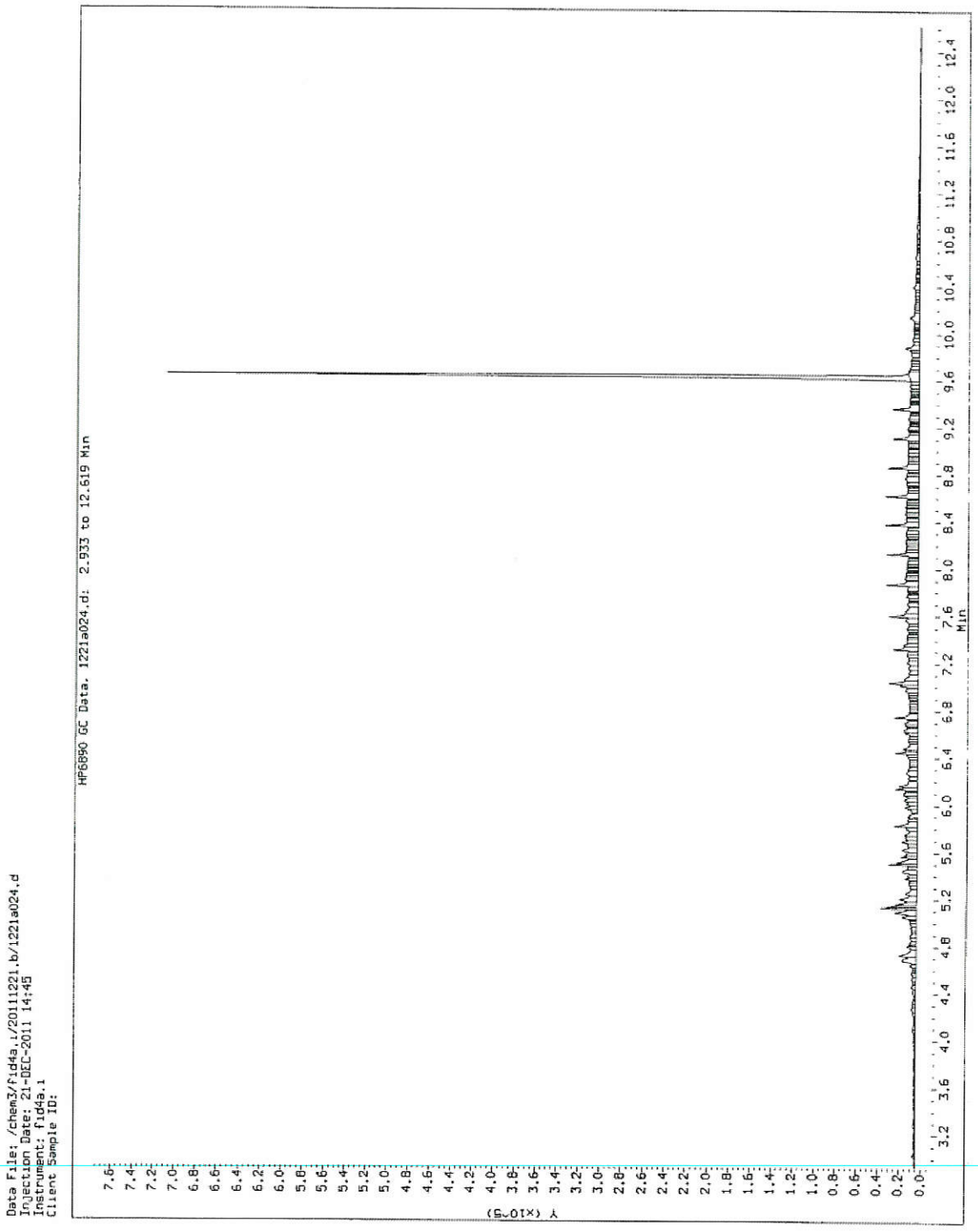
Injection Date: 25-OCT-2011 20:26
Instrument: fid3b.i
Client Sample ID: JET-A 1000
Min
Y (x10^6)

Gas/Diesel Mix



Bunker C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Injection Date: 21-DEC-2011 14:45
Instrument: fid4a.i
Client Sample ID:
HP6890 GC Data. 1221a024.d: 2.933 to 12.619 Min
Y (X10^3)
Min

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

Volatile Organics Analysis
(Gas Chromatography/Mass Spectrometry)

SOP 700S
Version 021

Revision Date: 5/15/19
Effective Date: 5/15/19

Prepared by:

Patrick Basilio, Paul Campbell, Lani Hertzog Van Spohn

Approvals:

Brian N. Bebee, Laboratory Section Manager

David R. Mitchell, Quality Assurance

Manager

Annual Review

SOP Number: 700S

Title: Volatile Organics Analysis (Gas Chromatography/Mass Spectrometry)

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

1. Scope and Application

1.1. This document describes the procedures for performing volatile organic analyses (VOA) used by Analytical Resources Inc. (ARI). The procedures are based on EPA Method 8260D and EPA Method 8000D Revision 5, March, 2018 referenced in Section 19.1 – 19.3. The procedures described also meet the requirements of EPA Method 624.1 (Reference 19.6). The modifications required when analyzing samples using EPA Method 624.1 are outlined in Appendix 20.12. The procedure will identify and quantify volatile organic compounds that have boiling points below 200˚C and that are insoluble or slightly soluble in water. Water-soluble volatile compounds may be included in this analytical technique, however, for the more soluble compounds, the quantitation limits are approximately ten times higher because of poor purging efficiency. ARI's routine target analytes for this procedure are listed in Appendix 20.3. Samples may be analyzed for additional analytes on a project specific basis.

1.2. This method is applicable to most environmental sample matrices, including aqueous (ground water, surface water, waste water, TCLP extracts), solid (soil, sediment, sludge), air samples in Tedlar bags and waste (waste solvent, oily waste, mousse, tar, polymeric emulsion, filter cake, spent carbon, etc.) samples.

1.3. ARI uses several sample preparation techniques to achieve project and/or client specific detection limits. Routine techniques are summarized in Table 01. Other preparation techniques may be employed to meet client requests.

Table 01
Typical VOA Analyzes performed by ARI

Sample Matrix	Sample size	Extraction Technique	Estimated LOQ
Water	5 mL*	Direct Purge & Trap	1 – 5 µg/L
Water	10 mL	Direct Purge & Trap	0.2 – 5 µg/L
Soil / Sediment	5 g	Direct Purge & Trap	1.0 – 5.0 µg/kg
Medium Level Solids	5 g	Methanol Extraction	50 – 250 µg/kg

*Trip blank run on soil instrument only

1.4. Batch QLS standards are prepared and analyzed with sample batches and are used to statistically determine detection (LOD) and reporting (LOQ) limits. QLS spikes are prepared and analyzed quarterly or more frequently, as necessary to establish DL, LOD and LOQ.

1.5. This document describes a purge-and-trap, gas chromatographic/mass spectrometric (GC/MS) procedure. This method is restricted to use by, or under the supervision of, analysts experienced in the use of purge-and-trap systems and gas chromatograph/mass spectrometers, and skilled in the interpretation of mass spectra and their use as a quantitative tool.

2. Summary of Procedure

2.1. This method requires separate preparation and analysis procedures. Sample preparation is outlined in Section 11.5. Analysis of prepared sample is accomplished using a Purge & Trap GC-MS instrument described in Section 11.3. Software in the GC-MS system automates the data acquisition and reduction process. Most calculations described in this document are performed automatically by the Target™ Software running on the Target Server. The formulae are provided for reference and may be used to manually verify calculated results.

2.2. There are two basic sample preparations.

2.2.1. Direct purge and trap where the sample is analyzed with no initial extraction or preparation.

2.2.2. Methanol is used to extract volatile organic compounds which is diluted into organic free water and analyzed.

2.3. Following sample preparation, volatile organic compounds are automatically purged from the sample and injected into the gas chromatograph using a purge-and-trap equipped GC-MS system.

2.3.1. Compounds purged from the sample using Helium are trapped in a tube containing suitable sorbent materials.

2.3.2. The sorbent tube is heated and back flushed with helium to desorb trapped sample components directly onto the GC-MS system following a split to optimize GC performance.

2.4. A narrow bore capillary GC column is temperature-programmed to separate the analytes, which are then detected with a mass spectrometer (MS).

2.5. Qualitative identifications are confirmed by analyzing standards under the same conditions used for samples and comparing resultant GC retention times and mass spectra.

2.6. Identified target analytes are quantified by comparing the detector responses of each analytes' characteristic mass ion and internal standard characteristic mass ion to the responses of these ions in a calibration curve prepared using analytes at known concentration.

2.7. Detection limits for all analytes quantitated using this SOP are set using the low point of the initial calibration curve and validated by QLS studies.

2.7.1. QLS studies are performed regularly for each analyte by each preparatory and analytical method.

2.7.2. DL, LOD and LOQ (RL) values may be found for each analyte in the ARI LQAP.

3. Definitions

3.1. CALGAS: perfluoro-tri-n-butylamine (FC-43), CAS 311-89-7.

3.2. Initial Calibration Verification (ICV): An instrument calibration standard is used to verify that the current instrument calibration is acceptable at the beginning of an analytical sequence.

3.3. Continuing Calibration Verification (CCV): An instrument calibration standard is used to verify that the current instrument calibration is acceptable during an analytical sequence.

3.4. Initial Calibration Verification Standard (ICVS): A standard prepared at the mid-point concentration of the initial calibration, and prepared from the same source as the initial calibration used to perform the ICV and CCV calibration checks

3.5. EICP- Extracted Ion Current Profile- A plot of the abundance of a specific ion as a function of time

3.6. Holding Blank: An OFW blank sample stored along with client samples. A holding blank is analyzed weekly to determine if there is cross contamination of samples introduced during storage in the laboratory. See Section 16 for contamination of holding blanks.

3.7. Initial Calibration (ICAL): a minimum of 5 points, with 7 points typical.

3.8. Second source calibration verification (SCV): A midpoint concentration standard from a source different than that used for the initial calibration used to demonstrate the validity of the initial calibration. The second source standard must be purchased from a different manufacturer than the calibration standard whenever possible.

3.9. Internal Standard (IS): internal standards are compounds added to each standard, sample, and QC sample such that their concentration is the same in each of these sample types. Target analyte response is normalized to the response of an internal standard.

3.10. Blank Spike (BS): OFW spiked with verified amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision or to assess the performance of all or a portion of the measurement system.

3.11. Blank Spike Duplicate (BSD): A replicate BS often used to assess the precision of an analytical method. When insufficient sample volumes exist to perform a required MS/MSD analysis, an BS/BSD may be performed to assess the precision of the analytical method. The BSD is prepared and analyzed identically to the BS. ARI fortifies the BS/BSD with all target analytes.

3.12. Element: Software used to compile and report final chromatographic data.

3.13. Method detection Limit (MDL): The lowest result that can reliably be distinguished in a matrix from a blank. MDL may also be referred to as Detection Limit (DL).

3.14. Limit of Detection (LOD) – The lowest result that can be reported while meeting method precision and accuracy requirements.

3.15. Method reporting limit (MRL): The lowest result that may be reported unqualified based on the lowest curve point. MRL may also be referred to as Limit of Quantitation (LOQ).

3.16. Matrix Spike (MS): A sample prepared by adding a known mass of target analyte(s) to a specified amount of sample matrix for which an independent estimate of target analyte

concentration is available. Matrix spikes are used to determine the effect of the sample matrix on the recovery efficiency of an analytical method. ARI fortifies Matrix Spike samples with all target analytes.

3.17. Matrix Spike Duplicate (MSD): A replicate matrix spike prepared in the laboratory and analyzed to obtain a measure analytical precision.

3.18. Method Blank (MB): A sample of OFW, free of any analytes of interest that is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures.

3.19. Organic Free Water (OFW): ASTM Type 1 water produced by ARI's centralized water purification system and run through a bed of activated charcoal in the VOA laboratory.

3.20. Minimum Reporting Limit standard (MRL): A blank spike prepared at method reporting limit, used to determine MDL, LOD and MRL.

3.21. RIC- Reconstructed Ion Current- A plot of the total instrument response versus time

3.22. RRT-Relative Retention Time- the elution time of an analyte relative to the elution time of its associated internal standard

3.23. Scan Descriptor: Defines a specific mass range for analytes of interest.

3.24. Instrument Blank (IB): A clean laboratory matrix (OFW and/or MeOH) is analyzed using the same conditions as a regular sample. A solvent blank detects system contamination and assures the purity of the solvent.

3.25. Surrogate – A substance with properties that mimic the analyte of interest. It is unlikely to be found in environment samples and is added to them for quality control purposes.

3.26. Target™ - A chromatography software package. ARI uses Target™ software to identify and quantify GC and GC-MS target analytes

3.27. Synchronous scan – Simultaneous acquisition of both SIM scan and full scan data.

4. Interferences

4.1. Solvents, reagents, glassware, and other sample processing hardware may yield artifacts and/or interferences to sample analysis. All these materials must be demonstrated to be free from interferences under the conditions of the analysis by analyzing method blanks. Specific selection of reagents and purification of solvents by distillation in all-glass systems may be necessary.

4.2. Contamination by carryover can occur whenever high-concentration and low-concentration samples are analyzed sequentially. To reduce carryover, sample syringes must be rinsed with organic-free water following each use. When an unusually concentrated sample is analyzed or suspected, it should be followed by the analysis of an instrument blank.

4.3. Contamination may occur by diffusion of volatiles through the septa into the sample during shipment or storage. Analysis of a trip blank and/or a holding blank prepared from organic-free water and carried through the sampling and handling protocol can serve as a check on such contamination.

4.4. All glassware associated with preparation is baked at 50 ±10 °C overnight to further reduce interferences.

4.5. Only high purity reagents and solvents are used to minimize interference.

5. Safety

5.1. The toxicity and carcinogenicity of each reagent used in this method is not precisely defined. However, all compounds and solutions should be treated as health hazards, and exposure of these chemicals to skin and clothing should be minimized to the lowest possible level by whatever means available.

5.2. Skin contact with all chemicals should be minimized by the use of nitrile gloves, safety glasses, and laboratory coats.

5.3. Standard solutions should be handled in the fume hoods to avoid chemical exposure.

5.4. All GC split vents and vacuum pump exhaust are connected to an exhaust vent.

5.5. ARI maintains a current awareness file of Occupational Safety and Health Administration (OSHA) regulations regarding the safe handling of the chemicals specified in this method. A reference file of safety data sheets (SDS) is available to all personnel involved in the chemical analysis. ARI maintains SDS sheets for all chemicals used in the laboratory. Consult the SDS whenever you have questions concerning the handling of a potentially dangerous substance. Information also available at www.msdshazcom.com

6. Equipment, Maintenance and Supplies

6.1. Gas chromatograph/mass spectrometer system

6.1.1. Gas chromatograph - An analytical system complete with a temperature-programmable gas chromatograph suitable for purge-and-trap systems and all required accessories, including syringes, analytical columns, autosampler, and gases. The capillary column should be directly coupled to the source of the mass spectrometer.

6.1.1.1. Fused-silica capillary column - 20 m x 0.18 mm ID x with a 1 µm film thickness coated with a proprietary cross bonded stationary phase (Restek RTX-VMS or RTX-502.2 or equivalent).

6.1.2. Mass spectrometer –Hewlett-Packard 5973/5975 or equivalent capable of scanning from 35 to 300 amu every 1 second or less, using 70 volts (nominal) electron energy in the electron impact ionization mode. The mass spectrometer must be capable of producing a mass

spectrum for Bromofluorobenzene (BFB) which meets all of the criteria in Appendix 20.3 when 5-50 ng BFB is desorbed onto the column.

6.1.2.1. GC/MS Interface – The GC column is connected directly to the MS ion source following a 1:40 split with SilicoSteel 0.040 inch ID

6.1.3. Purge and trap system

6.1.3.1. Varian Archon, Tekmar Teledyne Atomx or equivalent auto-samplers are used for analysis.

6.1.3.1.1. When running water samples, the auto-sampler removes samples directly from standard 45mL water sampling vials and transfers them to the purge and trap sparge vessel. The autosampler adds standards (IS & SS), drains and cleans the sparge vessel, and proceeds to the next sample.

6.1.3.1.2. When running soil samples, the auto-sampler performs a heated purge and trap by lifting the soil vial into the heated soil chamber, and sparges the sample directly onto the trap of the purge and trap unit.

6.1.3.2. Trap—Supelco trap K (VOCARB), OI Analytical 4560 Trap #10 or equivalent. The Tekmar Atomx and OI Analytical Eclipse 4660 purge-and-trap system should be capable of rapidly heating the trap to 250°C during the desorb process. The trap bake-out temperature should not exceed 260°C. A sample heater should be capable of maintaining the purging chamber to within 1°C over the temperature range of ambient to 100°C.

6.1.4. Data system - A computer system must be interfaced to the mass spectrometer. The system must allow the continuous acquisition and storage on machine-readable media of all mass spectra obtained throughout the duration of the chromatographic program.

6.1.4.1. The computer must have software that can search any GC/MS data file for ions of a specific mass and that can plot such ion abundances versus time or scan number. This type of plot is defined as an Extracted Ion Current Profile (EICP). Software must also be available that allows integrating ion abundances in any EICP between specified time or scan-number limits.

6.1.4.2. The data system should be equipped with an EPA/NIST Mass Spectral Library.

6.1.4.3. The data must be securely stored for at least seven years from date of acquisition.

6.2. Maintenance of GC/MS system

6.2.1. Preventative Maintenance as described below will be performed on an annual basis and entered into Element under the instrument maintenance logs section.

6.2.1.1. Fore pump oil will be replaced.

6.2.1.2. Source main board and power supply is dusted off.

6.2.1.3. GC main board is dusted off.

6.2.1.4. Autosampler is lubricated and calibrated.

6.2.2. Routine maintenance events are entered into the Element data system under the instrument maintenance logs section.

6.2.2.1. Routine maintenance may include (but are not limited to) any of the following tasks:

6.2.2.1.1. Autosampler repair

6.2.2.1.2. Column repair/replacement

6.2.2.1.3. Data system repair

6.2.2.1.4. Gas Chromatograph repair

6.2.2.1.5. Purge/Trap repair

6.2.2.1.6. Transfer line repair/replace

6.2.2.1.7. Inlet repair

6.2.2.1.8. Detector (source) repair/cleaning

6.2.2.1.9. Vacuum system repair

6.2.2.1.10. Service provided from an outside vendor will also be documented in Element

6.3. Microsyringes—10, 25, 50, 100, 250, 500, and 1,000µl

6.4. Syringes—5, 10, and 25mL, gas-tight

6.5. Balances—top loading, 0.01g readability

6.6. Glass scintillation vials—20mL, with Teflon lined screw-caps.

6.7. 45 mL sample vial with Teflon septa (pre-cleaned or baked at 50 ±10 °C to dryness).

6.8. Disposable Pasteur pipettes.

6.9. Volumetric flasks, Class A - 5mL, 10mL, 25mL, 50mL, 100mL and 500mL, with ground glass stoppers

6.10. Spatula—Stainless steel

6.11. Centrifuge that can accommodate 20 and 45mL vials.

7. Reagents and Standards

7.1. Methanol, CH_3OH: – Purge and Trap quality, demonstrated to be free of analytes. Methanol will be stored separately from other solvents.

7.2. Sodium Bisulfate – used for 5035 soil preservation

7.3. Organic-free water: - All references to water in this method refer to purified water produced by ARI's Deionized (DI) Water System.

7.3.1. The laboratory DI water system is ASTM Type 1 greater than 18.2 mega ohms resistivity.

7.3.2. The Volatile laboratory water is passed through an activated carbon column. Cartridges are changed when the chloroform exceeds 0.1ppb or methylene chloride levels exceed 0.2 ppb.

7.4. Stock Standards are high concentration (1000µg/ml, 2000µg/ml, 5000µg/ml) solutions of target analytes, calibration standards, internal standards and surrogates used to prepare working standards. Procedures for handling Stock Standards are described in SOP 704S.

7.4.1. Certified standards are purchased from outside vendors. Two sources from different manufacturers are obtained when feasible or at least two different lot numbers from the same manufacturer.

7.4.2. The use of a secondary source from the same manufacturer is not recommended and all attempts in a timely manner will be made to locate a second manufacturer.

7.5. Working Standards are used directly in the analytical process to fortify samples or calibrate instruments. Working standards are diluted from stock standards or purchased directly from commercial sources. The concentration of all purchased working standards must be certified by the supplier and have a Certificate Analysis (CoA) on file at ARI as described in SOP 1013S "Chemical Receiving and Monitoring". Procedures for handling Working Standards are described in SOP 704S.

7.5.1. Surrogate standards (SS) – Recommended surrogates are d8-Toluene, 4-Bromofluorobenzene, d4-1,2-Dichlorobenzene, and d4-1,2-Dichloroethane. Other compounds may be used as surrogates depending on analytical requirements. Prepare a surrogate standard spiking solution at a concentration of 25-250µg/ml in methanol.

7.5.2. Internal standards (IS) – The recommended internal standards are chlorobenzene-d5, 1,4-difluorobenzene, 1,4-dichlorobenzene-d4 and pentafluorobenzene. Other compounds that have similar retention times may be used. Prepare an internal standard (IS) working solution so that the IS concentration in a sample will match the mid-point concentration of the instrument calibration curve. Internal standards are added to the sample by an autosampler using an injection loop. The injection loop size varies by instrument. When making the internal standard mix, adjust the concentration to the loop size for each specific instrument.

7.5.3. 4-Bromofluorobenzene (BFB) standard: Prepare a 25 µg/mL solution of BFB in Methanol.

7.5.4. VOA Spiking Standard (VSS) – Used to prepare MS, MSD, BS and BSD samples and calibration standards. Certified working standards containing all of the VOA analytes are purchased from a commercial vendor. Purchased standards are combined and/or diluted to prepare the appropriate spiking solution. The spiking solution is also used to prepare calibration standards.

7.5.4.1. The standard is prepared in methanol, with each compound present at 20µg/mL except Acrolein and the ketones which are at 100µg/.

7.5.4.2. When a targeted analyte is not available in a commercial certified working standard, the appropriate concentration should be determined, and the solution prepared in a water-soluble solvent (usually methanol or acetone) at that concentration.

7.5.5. Calibration standards - Calibration standards are prepared from the VOA Spiking Standard at the time of calibration as described in Section 10.2.

7.5.6. Second Source Calibration Verification (SCV) is a certified working standard containing the same VOA analytes as the VSS but from a different source. The VSS and SCV may be purchased from different vendors or as different lot numbers from the same vendor. This standard is used to verify the concentration of the VOA spiking solution following an initial calibration.

7.6. Preservation solutions

7.6.1. Sodium Bisulfate solution is made by adding 400g to 2L of organic free water (equivalent to 1gm/5ml) and stirring until dissolved.

8. Sample Collection, Preservation, Shipment, Storage and Disposal.

8.1. Samples must be collected in an appropriate container, transported to ARI and stored under custody at >0 to 6 ºC.

8.2. Samples must be stored at ARI, at >0 to 6 ºC until final disposal.

8.3. Water samples must be stored at >0 to 6°C and analyzed within 7 days of sampling if not preserved with 1:1 HCl. Preserved aqueous samples must be analyzed within 14 days. Soil samples are to be stored at >0 to 6°C and must be analyzed within 14 days of sampling.

8.4. Preserved soil samples (Method 5035) are preserved with either 5ml of Sodium Bisulfate solution or 5ml Methanol.

8.5. Unpreserved solid samples for Method 5035 must be analyzed or preserved within two days of sampling.

8.6. A holding blank will be kept in refrigerator 21 and to be analyzed with samples at specified intervals (Section 9.5).

8.7. VOA Chain of Custody

8.7.1. Samples for VOA analysis are delivered to Refrigerator 21 by sample receiving and the sample custody is changed in element to reflect the refrigerator and storage box where the samples were placed.

8.7.2. To locate a sample, the VOA analyst will locate the sample bin for the workorder in Element under Sample control->Workorder->Samples->containers->Home location. The home location sample bin is determined by login. The Volatile sample bins are labeled with two locations, one is the home location (R-21) and the other is the archival location (R-36) using the same bin

number. This is done to facilitate reassigning the samples to another refrigerator without physically transferring the samples to another bin.

8.7.3. The analyst will remove the samples from refrigerator 21 or refrigerator 41 for hazardous samples.

8.7.4. In Element, the analyst will add the samples to the appropriate batch with the barcode reader or manually. Samples added to the batch will now show a status of batched.

8.7.5. In Element, the analyst will change the sample location to VOA lab in Batch->Bench Sheet. The custody is updated to the analyst's name when they change the sample location. The sample location will be the VOA lab until the analysis is completed.

8.7.6. When the analysis is completed the analyst will return the samples back to the home location bin in refrigerator 21 (or 41) and update the location in Batch->Bench Sheet to the home location. The analyst may repeat step#1 if they need to query the sample home location. NOTE: Samples in refrigerator 41 are not assigned a bin and the sample location is simply R-41.

8.7.7. Sample bins are stored in R-21 until it begins to run out of space. The analyst will transfer the filled bins to R-36 and change the location in Element under sample control disposal using the edit location feature. Next the analyst will mark all samples now stored in R-36 as archived in sample control->disposal.

8.7.8. Final disposal is performed when R-36 is nearly full.

8.7.9. Prior to final disposal the analyst will query all the samples in the sample bin under sample control->disposal to identify samples that are hazardous waste. Samples that are hazardous are indicated by the red font. Hazardous samples must be placed in the appropriate blue waste drum for that profile. See the chemical hygiene manual for guidance on characterizing hazardous waste. Once the bin is empty in Element->sample control->disposal mark the contents of the bin as disposed and change the location of the samples to consumed.

8.7.1. Non-hazardous unpreserved soil and solid samples are taken directly to the dumpster and trash disposed.

8.7.2. Methanol preserved soil samples (5035) are disposed into a 55 gallon waste barrel dedicated for methanol preserved samples.

8.7.3. Methanol extracts of soil and solid samples (medium level analysis) are also to be disposed into the dedicated methanol waste barrel.

8.7.4. Unpreserved Water samples, preserved water samples, and soil samples preserved with Sodium Bisulfate are disposed into a dedicated hazardous waste drum outside the share fridge (#36).

9. Quality Control

9.1. Quality Control procedures and requirements are summarized in Appendix 20.1.

9.1.1. Acceptance criteria for ARI's routine analyses listed in the column title "ARI Acceptance Criteria".

9.1.2. For DoD-QSM acceptance criteria, see DoD QSM 5.1.

9.2. Some clients and/or projects may have different quality control procedures or criteria. Always read and understand any "special Instructions" supplied by an ARI Project Manager.

9.3. Instrument control:

9.3.1. A Method Detection Limits (MDL) study is performed for each analysis to provide recovery and precision for the method.

9.3.2. The GC-MS must be tuned to the specifications in Appendix 20-4 before initial calibration, and thus before samples are analyzed. The tune must be performed with 5-50ng total BFB standard. It is required that an ICV, BS, BSD and a method blank be analyzed with acceptable QC before analyzing samples.

9.3.3. Internal standard (IS) area criteria in the samples must be evaluated for retention time shift and EICP areas.

9.3.3.1. If the EICP area for any IS changes by -50% to +100% from the area of the IS in the midpoint of the initial calibration, the samples must be reanalyzed.

9.3.3.2. Retention time shift of internal standards must be ± 0.06 RRT units from the ICV internal standard RT.

9.4. Method performance:

9.4.1. Samples are analyzed in 12-hour run sequences known as QC periods. Each 12-hour QC period begins when an ICV sample analysis starts and ends following the analysis of the last sample injected within 12 hours of the initial sample injection. A BFB tune is required prior to initial calibration but is not a daily QC requirement.

9.4.2. One method blank will be performed each 12-hour shift after calibration standards and prior to the analysis of any samples.

9.4.2.1. A method blank is run to demonstrate system cleanliness (no analytes should be detected > ½ method reporting limits). Blanks may contain analyte concentrations greater than acceptance limits if the associated samples in the batch are unaffected (i.e., targets are not present in the samples or sample concentrations/responses are greater than 10x the blank. Surrogates are to be within the established control limits.

9.4.2.2. Corrective action must be taken when MB contamination is greater than ½ the method reporting limits and the samples contain detections of the analyte that are above the reporting limit and less than 10x the concentration found in the blank. Re-

analysis is not necessary if the analyte concentration falls well below the action or regulatory limit or if the analyte is deemed not important for the project. See section 16.2.

9.4.2.3. Methylene Chloride, Acetone and 2-Butanone are allowed at up to 5 times the method reporting limit. Method blanks containing any of these analytes > ½ the RL must be documented in the reviewer checklist for the analytical run and all associated hits flagged with a "B".

9.4.2.4. Prepare a water method blank by adding 45mL organic-free water to a pre-cleaned auto-sampler vial.

9.4.2.5. Prepare a soil method blank by adding 5mL organic-free water to a pre-cleaned auto-sampler vial.

9.4.3. A Blank spike must be analyzed before analyzing samples. At a minimum one (BS) must be run in each 12 hr. QC period. It is recommended an (BSD) be analyzed also. The control limits for all compounds is ± 20% or ARI's published historical control limits. The maximum allowed relative percent difference (RPD) for an BS and BSD) is 30%.

9.4.4. Since the BS analysis is prepared in an identical manner as the ICV a single analysis may be used for both the ICV and BS. Two copies of the data file must be present in both Target and Element to reflect the dual usage of a single analysis.

9.4.4.1. Compounds that do not meet these limits must be documented in the Element reviewer checklist.

9.4.4.2. Prepare a water BS by adding VOA Spiking Standard (VSS) to 45mL organic-free water, to a final concentration equivalent to that of the CVS.

9.4.4.3. Prepare a soil BS by adding the VSS to 5mL of organic-free water to a final concentration equivalent to that of the CVS.

9.4.5. One set of matrix spikes is analyzed for each 20 samples/matrix/instrument (when requested and adequate sample is available) at a known concentration level within the range curved, typically at 50ng/mL for 5mL and 10ng/mL for 10mL purges and 50ng/g for soils.

9.4.5.1. The MS/MSD samples are run and the relative percent difference must be calculated between the two control samples. The RPD for each analyte for MS/MSD should be less than 30% and note any deviation >30% in the reviewer checklist.

9.4.5.2. ARI will not perform MS/MSD analysis on any of the field QC samples delivered as part of a client's QA/QC program (water rinsate samples, field/trip blanks etc.)

9.4.5.3. Dilution of MS/MSD extracts to get either spiked compounds or native analytes on scale is not necessary.

9.4.6. QC limits are provided to bench chemists, managers, and QA review personnel as tools for

assessing data quality in real-time at the point of data generation.

9.5. A holding blank will be kept in volatile refrigerator 21 and will be analyzed every week. Holding blank data is documented in ELEMENT.

9.6. Surrogates are added to each sample, blank, and standard, and are used to evaluate the purge and trapping efficiency by measuring recovery. Surrogates are brominated, fluorinated or isotope labeled compounds not expected to be detected in samples.

9.7. Statistical Control- Internal quality control limits for analyte spike and surrogate recoveries and relative percent difference for matrix spike and matrix spike duplicates are statistically generated on an annual basis.

9.7.1. These quality control limits are provided to bench chemists, managers, and QA staff as tools for assessing data quality in real-time at the point of data generation.

9.7.2. Practical considerations relating to their dynamic nature require their presentation in a document separate from this SOP. Current control limits may be found in the ARI LQAP.

9.7.3. All analysts using this SOP must use it in conjunction with Control Limit documentation in order to assess data quality and any possible need for corrective actions.

10. Calibration and Standardization

10.1. Summary of VOA calibration procedure:

Table 02 – Summary of GC-MS Calibration Procedure

Step	Section	Procedure	Manual/Computer
1	10.2	Prepare Calibration Samples	
2	10.3	Verify Instrument Tune	
3	10.4	Analyze Calibration samples	
4	10.5	Target Calculates RRF & %RSD	
5	10.6	Validate analyte response	
6	10.7	Analyze Instrument Blank	
6	10.8	Analyze SCV	
7	10.9	Evaluate IS Response	
8	10.10	Verify Retention Times	
9	10.11	Update Analytical Method	

10.2. Prepare Calibration samples:

10.2.1. Using a new unopened vial of VOA spiking solution (VSS) (Section 7.5.4.4), prepare a set of five or more calibration samples containing all target analytes. This is accomplished by spiking separate volumes of VOA free water with increasing volumes of the VOA spike working standard as listed in Table 03. Calibration samples are prepared in 45 mL VOA vials. The volume of the calibration samples must be equal to the volume that will be analyzed to account for purge efficiencies that vary with sample volume. The concentration of analytes in the lowest

level sample must less than or equal to the method reporting limit. The concentrations in the calibration standards define the working range of the method. A set of at least 5 calibration standards containing the method analytes is required. One calibration standard should contain each analyte at the concentration of the method reporting limit for that compound. The other calibration standards should contain analytes at concentrations that define the range of the method. The remaining concentrations should correspond to the expected range of concentrations found in real samples but should not exceed the working range of the GC/MS system. ARI typically calibrates with between five and eight calibration levels covering the dynamic range of the instrument and meeting the required method reporting limit of the project. (note: Acrolein and the ketones are at 5X concentrations). To prepare a calibration standard, add an appropriate volume of a secondary dilution standard solution to an aliquot of organic-free reagent water. Transfer the contents to a purging device.

10.2.2. Ketones and Acrolein are spiked at 5X the concentration levels of the other analytes due to their poor purge efficiency.

Table 03 – Typical Calibration Solution Concentrations

Standard	Direct Purge 5 mL water 5 g Soil	Direct Purge 10 mL Water
1	1	0.2
2	2	0.5
3	5	1.0
4	10	2.0
5	50	10
6	100	20
7	150	40
8	200	80

10.2.3. Initial calibration standards, continuing calibration standards and surrogates for the soil side of the autosampler are made in a minimum amount of water. The standards are then transferred to 45 mL vials, each containing a magnetic stir bar. Internal standards (IS) and Surrogate standards (SS) are added by the autosampler.

10.2.4. Initial calibration standards, continuing calibration standards and surrogates for the water side of the autosampler are made at volumes for use in 45 mL vials containing magnetic stir bars. The appropriate sample volume of the standard is transferred via the autosampler to a sparger vessel, and purged. The IS/SS solution is added by the autosampler standard syringe.

10.2.5. Surrogates are not curved, they are spiked at the same level for all calibration points.

10.3. Verify that the instrument is properly tuned following the procedure in Appendix 20.4

10.4. Analyze Calibration Samples:

10.4.1. Analyze each calibration sample using the exact conditions and procedure to be used for

subsequent sample analyzes.

10.4.2. View the "CLP Report" using Target™ software and evaluate each target analyte.

10.4.2.1. Verify that the automated routine has properly identified and quantified all peaks.

10.4.2.1.1. Perform any required manual integration as necessary.

10.4.2.2. Verify that the internal standard (IS) is in control.

10.5. Target™ will tabulate relative response factors (RRF), Average RRF, relative standard deviation (RSD) and % RSD using Equations 01 through 04 for each compound relative to its internal standard.

Equation 01:
$RRF = (A_X C_{IS}) / (A_{IS} C_X)$
A_X = Area of the characteristic ion for the compound being measured
A_{IS} = Area of the characteristic ion for the associated Internal Standard
C_{IS} = Concentration of the associated internal standard
C_X = Concentration of the compound being measured

10.6. Equation 02:
Average RRF = Σ RRF_i / n
where:
RRF_i = the peak response factor for each quantitation peak in the calibration standard
n = the total number of standards (usually 7)

Equation 03:	
RSD = SD / (Ave RRF) =	$\frac{\sum(RRF_i - \text{Ave RRF})^2) / (n-1))^{1/2}}{\text{Ave RRF}}$
where:	
SD = Standard deviation of the response	

Equation 04:
%RSD = RSD * 100

10.6. Evaluate Analyte Response.

10.6.1. When the %RSD for a given target is ≤ 20% (15% for DoD analyses), the detector response is considered linear and the average RRF may be used to quantify that compound.

10.6.2. When %RSD is >20% (15% for DoD analyses) for any compound, the analyst may use an alternative method to evaluate the acceptability of the calibration.

10.6.2.1. NOTE: Forcing the calibration model through the origin (for anlaytes that are consistently detected in the laboratory method blanks) allows for a better estimate of the background level of blank contaminants. An accurate estimate of background

contamination is necessary to set method reporting limits for method analytes when blank levels are problematic.

10.6.3. The curve must meet minimum RRF requirements noted in Appendix 20.3.

10.6.4. If more than 10% of the compounds included in the initial calibration exceed 20% (15% for DoD analyses) RSD and do not meet the minimum coefficient of determination of 0.99, for alternate curve fits, the chromatographic system is considered to imprecise for analysis to begin.

10.6.5. For linear and non-linear calibration curves based on a least squares regression (LSR) model the coefficient of determination (COD) r^2 must be > 0.99.

10.6.6. Special care should be taken to monitor the RRF in the lowest calibration standard to ensure adequate sensitivity at the method reporting limit. In addition, the lowest calibration point should be recalculated (not reanalyzed) using the final calibration curve in which this standard is used. The recalculated concentration, especially where linear regression fits are used, should be within +/- 50% of the standard's true concentration. The recalculated concentration of the standards above the low point should be within +/- 30%. If a failure occurs in the low point and it is equivalent to the RL, the analyte should be reported as estimated near that concentration or the RL should be reestablished at a higher concentration. Following examination of the ICal and any corrective action, all compounds not meeting the calibration acceptance criteria must be documented in the Reviewer Checklist in Element.

10.7. An instrument blank must be analyzed immediately following the highest point of the calibration. This blank can be used to estimate the extent of decontamination needed to eliminate carryover after analyzing a sample at similar concentration.

10.8. A secondary calibration verification (SCV) is performed by analyzing a midpoint calibration standard prepared using the SCV mix. ARI will spike the full list of compounds at a mid-calibration range concentration. Calibration verification is acceptable when the recovered analytes are within ± 30% (20% for DoD analyses) of the expected concentration. Specific clients or projects may allow or require different calibration acceptance limits. When any analytes are not in the acceptable range corrective action and documentation the reviewer checklist is required.

10.9. The internal standard responses and retention times in the initial calibration verification standard must be evaluated during or immediately after data acquisition.

10.9.1. If the EICP area for any of the internal standards changes from -50% to +100% from the last midpoint concentration of the initial calibration, the mass spectrometer must be inspected for malfunctions and corrections must be made, as appropriate. Areas are documented in the daily run log.

10.10. If the retention time for any internal standard changes by more than 30 seconds from the last daily calibration, the chromatographic system must be inspected for malfunctions and corrections must be made, as required.

10.11. Update the analytical method file with updated RT and RRF data.

10.12. The reviewer checklist from the Initial Calibration must be included with every job run under the corresponding initial calibration.

11. Procedure

11.1. Procedure Summary

Table 04 – Procedure Summary		
Step	**Process**	**See Section**
1	Project Evaluation	11.2
2	Set or Verify Instrument Operating Parameters	11.3
3	Verify Spiking Solution in the autosampler	11.4
4	Prepare Samples for Analysis	11.5
5	Set up Analytical Run	11.6
6	Initiate sample analysis	11.7
7	Verify Instrument Calibration	11.8
8	Evaluate Mass Spectra	11.9
9	Evaluate QC Analyses	11.10
10	Export Data to Element	11.11

11.2. Project Evaluation

11.2.1. Holding times: Review project documentation to determine when sample holding time will expire. If there is any chance the sample will not be analyzed with the required holding time, notify your laboratory supervisor and/or the appropriate project manager.

11.2.2. Special requirements: Non-routine analytical requirement may be required for a specific project or sample. Review all project documentation and make sure you understand any special requirement before proceeding with analysis.

11.2.3. Historic Data may be available for a continuing project or sampling site. Use this data to pre-determine any special sample handling necessary.

11.3. Set up the GC/MS/Autosampler system as outlined in Tables 06, 07 and 08:

11.3.1. This should be done prior to the preparation of the sample to avoid loss of volatiles from prepared standards and samples.

Table 06 – Typical Instrument Operating Parameters
Mass Spectrometer

Mass scan range	35 – 300 amu
Scan time	1 sec/scan or less
Electron volts	70 volts (nominal)
Gas Chromatogram	
Initial Temperature	43 – 46 °C
Temperature Program	46-240°C at 12°C/min
Final temperature:	240°C, hold 4 min
Source temperature:	According to manufacturer's specs, 150-250°C
Transfer nozzle/line:	180-250°C
Carrier Gas:	Helium at 25-50 mL/min
Purge & Trap	
Purge	8-11 minutes
He flow rate	25 – 50 mL/min
Sample Heater	40 °C
Desorb preheat	250°C
Desorb	1-6 minutes at 250°C
Bake	4-10 minutes at 260°C
Valve temperature	50-110°C
Mount temperature	30-110°C
Line	50-200°C

11.4. Table 07 – Typical Autosampler Set-up - Manual Mode

Parameter	Autosampler Options	Recommended Set-up	
		Water	Soil
Flush Volume	5, 10, 15, 20 mL	10	5
Select matrix	Water or Soil	Water	Soil
Standard	Yes or No	Yes	Yes
Sample Volume	5, 10, 15, 20 mL	5 or 10	--
Dilution	0 – 95 %	0	--
Flushes	0 - 10	1	--
Stir Time	0 – 15 min	0	--
Settle Time	0 – 15 min	0	--
Stir Speed	L, M, H	M	--
Desorb Time	0 – 10 min	1	--

Flow Rate	0 – 150 mL/min	40	
Line Heat	25 – 125 °C	--	80
Pre-heat	0 – 10 min	0	0
Water Volume	0 – 10 mL	--	7
Pre-purge	0 – 10 min	0	0
Purge time	0 – 20 min	10	10
Flushes	0 - 10	--	1
Soil Stir	Yes or No	--	Yes
Desorb time	0 – 10 min	--	2
Water Trap Volume	Yes or No	--	0

11.5. Table 08 – Typical Autosampler Set-up - Auto Mode

Parameter	Options	Recommended Set-up	
		Water	Soil
Start delay	0 – 99.5 hours	0	0
Cycle time	0 – 199 min	0	24
Auxiliary output	Yes or No	No	No
Last water or soil	Vial number	1 – 30	1 - 30
Blank Last	Yes or No	No	No
Flush Volume	5, 10, 15, 20 mL	5 or 10	5
Select Matrix		Water	Soil
Standard	Yes or No	Yes	Yes
Sample Volume	5, 10, 15, 20 mL	5 or 10	--
Dilution	0 – 95 %	0	--
Flushes	0 - 10	2	--
Stir Time	0 – 15 min	1	--
Settle Time	0 – 15 min	0	--
Stir Speed	L, M, H	M	--
Desorb Time	0 – 10 min	1	--
Flow Rate	0 – 150 mL/min	40	40
Line Heat	25 – 125 °C	--	80
Pre-heat	0 – 10 min	--	0
Water Volume	0 – 10 mL	--	7
Pre-purge	0 – 10 min	0	0
Purge time	0 – 20 min	10	10
Flushes	0 - 10	--	1
Soil Stir	Yes or No	--	Yes
Desorb time	0 – 10 min	--	2
Water Trap Volume	Yes or No	--	No

11.6. Verify Spiking Solutions

11.6.1. Verify the IS / SS standard volume in the autosampler reservoir. Add standard as necessary.

11.7. Prepare Samples for Analysis: Samples must be properly prepared for analysis using the processes outlined in Table 05.

Table 05 – Sample Preparation Procedures			
Sample Matrix	**Method**	**Technique**	**Details in Section:**
All	Sample Screening	Sample Dilution	11.7.2.1
Water	5030B	Direct P&T	11.7.4
Soil	5035	Direct P & T	11.7.5
Solid	5035	Methanol Extraction	11.7.5
Soil		From Total Solids Jar	11.7.5.3.3
Waste	3585	Waste Dilution	11.7.5.4

11.7.1. **Prepare the Instrument:** The Purge and Trap GC-MS instrument must be readied before samples are prepared for analyses to allow minimum time lapse between preparation and analysis.

11.7.2. **Sample screening:**

11.7.2.1. Any sample with characteristics (color, odor, client information etc.) indicating it may contain high levels should be screened prior to analysis. Screening may also help prevent un-necessary contamination of the purge-and-trap system. Samples are screened by analyzing them at dilution.

11.7.2.1.1. Aqueous samples: dilute the samples with an appropriate volume of OFW and analyze as a normal sample.

11.7.2.1.2. Extract solid samples with methanol and dilute a small aliquot of the methanol into 45 mL OFW for analysis.

11.7.2.1.3. A portable PID may be used to assess the sample.

11.7.3. All client samples, QA samples and standards must be spiked with surrogate (SS) and internal standards (IS) prior to analysis. The SS and IS are normally added to the sample by the auto-sampler. When samples are analyzed manually, the analyst must spike each sample individually.

11.7.4. **Aqueous Sample Preparation:**

11.7.4.1. Screen aqueous samples when historic data or their appearance indicated that they may contain high concentrations (> 2mg/L) of volatile compounds. When the screening indicates a high concentration of volatiles dilute the sample with OFW.

11.7.4.2. Aqueous samples are normally received by ARI in 45 mL VOA vials. The VOA

vials are placed directly on the auto-sampler for analysis. The auto-sampler will spike surrogate and internal standard into the sample prior to the purge process.

11.7.4.3. Manual Sample Preparation: Remove the plunger from a 10mL syringe and attach a closed syringe valve. If lower detection limits are required, use a 25mL syringe. Open the sample or standard bottle, which has been allowed to come to ambient temperature, and carefully pour the sample into the syringe barrel to just short of overflowing. Replace syringe plunger and compress the sample. Open the syringe valve and vent any residual air while adjusting the sample volume to 5.0 or 10 mL. Transfer remaining sample to a 45mL VOA vial with a Teflon™ sealed cap or fill a second syringe at this time to maintain sample integrity. Manually spike the appropriate amount of internal standard/surrogate mix directly into the syringe prior to introducing the sample into the sparge vessel. This manual preparation is only done in special circumstances.

11.7.4.4. For matrix spike, matrix spike duplicate, and BS analyses, add the appropriate amount of spiking solution to the 45mL vial containing the sample to be purged to a known concentration level within the range curved.

11.7.4.5. Appropriate concentration range for analysis.

11.7.4.5.1. Use screening data, historic project information, sample appearance or other ancillary information to determine appropriate purge or dilution volumes prior to analysis.

11.7.4.5.2. The amount a sample may be diluted is determined by the purge volume and final concentration of target analytes.

11.7.4.5.3. Prepare dilutions in a 45 mL vial taking care to maintain sample integrity by keeping atmospheric exposure of the sample to a minimum

11.7.4.5.4. Add a stir bar to the 45 mL vial or leave a small pea bubble in the vial to facilitate mixing while shaking the sample.

11.7.4.5.5. Dilutions in excess of 5000X may be prepared using an intermediate Methanol (or OFW) dilution taken directly from the sample vial.

11.7.4.5.6. Always perform a final review of multiple analyses from the same sample and note any major deviations in analyte concentrations in the Element reviewer checklist.

11.7.4.6. Compositing samples prior to GC/MS analysis

11.7.4.6.1. The samples must be cooled at >0 to 6°C during this step to minimize volatilization losses. Combine an equal amount of each sample to be composited in a volumetric flask. Invert and shake 3 times and transfer to a sample vial or a 5mL

gas tight syringe.

11.7.4.6.2. Samples composited in this fashion will be qualified in the reviewer checklist.

11.7.5. **Solid Samples (Soil & Sediment) Preparation:**

11.7.5.1. Screen solid samples when historic data or their appearance indicated that they may contain high concentrations (> 2mg/L) of volatile compounds. When the screening data indicates a high concentration of volatiles, use less sample for a direct purge analysis or use less methanol extract in the analysis.

11.7.5.2. Solids samples are normally reported on a dry weight basis. Always perform a dry weight determination (Appendix 20.8) unless the project plan requires data reported on an “as received” basis.

11.7.5.3. Low concentration direct purge & trap

11.7.5.3.1. This is designed for samples containing individual purgeable compounds of < 1 mg/kg. The low-concentration method is based on purging a heated (40°C) sediment/soil sample mixed with OFW containing the surrogate and internal standards. Analyze all blanks and standards under the same conditions as the samples.

11.7.5.3.2. Use a 5g sample if the expected concentration is <0.2 mg/kg or a 0.5g-5g sample for expected concentrations between 0.2 and 2mg/kg.

11.7.5.3.3. The sample consists of the entire contents of the sample container. Do not discard any supernatant liquids. If sample has free liquid, mix the unopened container 1 min using a Vortex mixer or mix the contents with a small metal spatula. When no free liquid is present remove the top layer to expose uncompromised sample. Weigh the sample into a tared purge device and record the actual weight to the nearest 0.1g. Samples collected following EPA Method 5035 will be pre-weighed.

11.7.5.3.4. Heat and purge the sample. Be sure the trap is cool (<35°C)

11.7.5.3.5. If saturated peaks occurred or would occur if a 0.5g sample were analyzed, the high concentration method (Medium Level soil method) must be followed.

11.7.5.4. Methanol Extraction for medium level soil or waste samples. This method is based on extracting the sediment/soil with methanol. A waste sample is either extracted or diluted, depending on its solubility in methanol.

11.7.5.4.1. Do not discard any supernatant liquids. Mix the contents of the sample container with a narrow metal spatula. Using a top loading balance weigh 5g (wet weight) of sample into a tarred 20 mL vial. Record the actual weight to 0.1g.

Determine the percent dry weight of the sample as described in Appendix 20.4. Measure 5mL of Methanol into the vial. Stir the sample Methanol mixture for 2 to 3 minutes using a vortex mixer.

11.7.5.4.2. Pipet a portion of the extract to a clean amber Teflon sealed vial for storage (limiting headspace). The remainder may be disposed. Store the extracts at >0 to 6°C in refrigerator 25, prior to analysis.

11.7.5.4.3. After determining the required dilution, add the appropriate amount of extract to the Autosampler vial (100µL to 10µL / 5mL). If the extract amount to be added is less than 10µL, or a secondary dilution is needed, surrogates will be diluted to a level near or below the calibration range; additional surrogate must be added by the Autosampler standard syringe.

11.7.5.4.4. For a matrix spike in the medium level samples, add 25µL of matrix spike solution and an appropriate aliquot of this extract to 5mL of organic-free water for purging. Purge and start analysis of the sample.

11.8. Set Up Analytical Run

11.8.1. Samples are analyzed in 12 hour run sequences known as QC periods. Each 12-hr QC period begins when an ICV sample analysis starts and ends following the analysis of the last sample injected within 12 hours of the initial sample injection.

11.8.2. The ICV standard may be omitted if samples are analyzed within twelve hours of the ICAL, and the injection of the last ICAL standard may be used as the starting time reference for evaluation.

11.8.3. Setup an analytical run by placing 45 mL sample vials containing either standards or client samples in the autosampler tray in the order listed in Table 09.

Table 09 – Example Analytical Run Sequence

Sample Sequence	Sample Type
1*	Daily Initial Calibration Verification
2	BS
3	BSD
4	Method Blank
5 through 50	Prepared Client Samples
* These may be combined	

11.8.4. The autosamplers may run in manual or automatic mode.

11.8.5. Enter the sample identifications into the Chemstation software

11.9. Initiate Sample Analysis

11.9.1. Proceed with the analysis. Analyze all blanks on the same instrument as that used for the samples. The standards and blanks should also contain 100µL of the purge-and-trap grade

MeOH to simulate the sample conditions when analyzing extracted solid samples.

11.9.2. The instrument system will transfer sample to the purge and trap sampling device and perform the GC-MS analysis automatically.

11.9.3. The analyst is responsible for assuring that the automated peak identifications and integrations are acceptable.

11.9.4. Verify Instrument Calibration. (Tuning is required prior to initial calibration, but not on a daily basis.)

11.9.5. MS tuning- prior to initial calibration, each GC/MS system must be hardware-tuned to meet the criteria in Appendix 20.3for a 50ng total or less injection of BFB. Analyses must not begin until all these criteria are met. Evaluate the ion abundance as following: Use the mean of the apex and the preceding and following scans (the mean of a symmetric pattern of scans about the apex). Background subtraction is required using a single scan no more than 20 scans prior to the elution of BFB. The tune must satisfy the ion abundance acceptance criteria listed in Appendix 20.3. Do not subtract part of the BFB peak.

11.9.6. It is also acceptable to evaluate the BFB ion abundance by averaging all scans from the entire peak and subtracting a single scan no more than 20 scans prior to the elution of BFB. The evaluation of BFB ion abundance from an entire peak must be documented in the reviewer checklist including the scans used for averaging and the single scan used for subtraction.

11.9.7. Evaluation of raw data to BFB abundance criteria will be performed after rounding to the number of significant figures listed in Appendix 20.3 for each mass.

11.9.8. BFB tuning is required prior to initial calibration, but not on a daily basis. The same conditions must be used for sample analysis.

11.9.9. The 12-hour QC period starts with the ICV injection time and ends with the injection time of the last run inside the 12 hours.

11.9.10. Additional analysis may be performed beyond the 12-hour period using a closing CCV that also meets all the requirements for an opening ICV.

11.9.11. All analyses performed in the twelve-hour QC period following the ICV standard must use the same instrument parameters (GC program, MS parameters, etc.)

11.9.12. Review chromatographic data to assure all peaks are identified and integrated correctly following the procedures in SOP 1021S.

11.9.13. Verify that the response of all internal standards is -50% to +100% of the compound's response in the most recent initial calibration midpoint standard.

11.9.14. Daily GC/MS initial calibration verification

11.9.14.1. An initial calibration check standard (ICV) at mid-concentration containing each compound of interest, including all required surrogates, must be performed once every

12 hours prior to sample analysis. Compare the response factor data of the standard each 12 hour shift that samples are to be analyzed against the average response factor from the initial calibration for a specific instrument.

11.9.14.2. Determine the percent drift (%D) for all analytes in the daily initial calibration verification.

11.9.14.3. The calibration for all compounds with a %D ≤ 20 is acceptable.

11.9.14.3.1. Method 8260 allows up to 20% of the target analytes to be greater than 20%. If more than 20% of the analytes have %D > 20% corrective action is required prior to analysis.

11.9.14.3.2. Compounds with >20%D may be reported when it can be demonstrated that there is adequate sensitivity to detect the compound if it were present. Such compounds must be documented in the reviewer checklist and the data Q-flagged for any reported value.

11.9.14.4. Evaluate the IS response in the ICV compared to the response in the mid-point of the initial calibration. The response must be within 50-200% relative to the response of that IS in the mid-point ICAL standard or the average of responses in the suite of ICAL standards.

11.10. Evaluate Mass Spectra

11.10.1. Relative intensities of major ions in the reference spectrum (ions >10% of the most abundant ion) should be present in the sample spectrum. If not, the compound may be flagged with “M” if the analyst feels the identification is real (this favors false positives).

11.10.2. The relative intensities of the major ions should generally agree with the reference spectra.

11.10.3. Molecular ions present in the reference spectrum should be present in the sample spectrum.

11.10.4. Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of co-eluting compounds.

11.10.5. Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or co-eluting peaks. Data system library reduction programs can sometimes create these discrepancies.

11.10.6. An analyte is identified by comparison of the sample mass spectrum with characteristic ions in a reference mass spectrum. The reference mass spectrum must be generated by the laboratory using the initial calibration. These standard reference spectra may be obtained through analysis of the calibration standards. The characteristic ions are defined as the three

ions of greatest intensity, or any ions over 30% intensity relative to the base ion, if less than three such ions occur in the reference spectrum. Two criteria must be satisfied to verify identification: (1) elution of sample component at or near the same GC relative retention time (RRT) as the standard component; and (2) correspondence of the sample component mass spectrum and the standard component mass spectrum.

11.10.7. The intensities of the characteristic ions must maximize in the same scan or within one scan of each other. Selection of a peak by a data system target compound search routine where the search is based on the presence of a target chromatographic peak containing ions specific for the target compound at a compound-specific retention time will be accepted as meeting this criterion.

11.10.8. The sample component RRT must compare within ±0.06 units of the RRT of the standard component. For reference, the standard must be run within the same 12 hour QC period as the sample. If co-elution of interfering components prohibits accurate assignment of the sample component RRT from the total ion chromatogram, the RRT should be assigned by using extracted, ion-current profiles for ions unique to the component of interest.

11.10.9. All ions present in the standard mass spectra at a relative intensity greater than 10% (the most abundant ion in the spectrum is equal to 100% intensity) should be present in the sample spectrum.

11.10.10. The relative intensities of ions specified in Appendix 20.3 must agree within plus or minus 30% between the standard and sample spectra. (Example: For an ion with an abundance of 50% in the standard spectrum, the corresponding sample abundance must be between 20% and 80%.). If not, the compound may be flagged with an "m" if the analyst determines that the identification is valid (favors false positive).

11.10.11. Structural isomers that produce very similar mass spectra should be identified as individual isomers if they have sufficiently different GC retention times. Sufficient GC resolution is achieved if the height of the valley between two isomer peaks is less than 25% of the sum of the two peak heights. Otherwise, structural isomers are identified as isomeric pairs and reported as the sum of both compounds.

11.10.12. Identification is hampered when sample components are not resolved chromatographically and produce mass spectra containing ions contributed by more than one analyte. When gas chromatographic peaks obviously represent more than one sample component (i.e., a broadened peak with shoulder(s) or a valley between two or more maxima), appropriate selection of analyte spectra and background spectra is important. Examination of extracted ion current profiles of appropriate ions can aid in the selection of spectra, and in qualitative identification of compounds. When analytes co-elute (i.e., only one

chromatographic peak is apparent), the identification criteria can be met, but each analyte spectrum will contain extraneous ions contributed by the co-eluting compound.

11.10.13. Secondary ion quantitation is allowed only if there are sample matrix interferences with the primary ion.

11.10.14. All dilution efforts should try to keep the response of the major constituents (previously saturated peaks) in the upper half of the linear range of the curve. To determine the dilution factor, compare a minor ion in the saturated analyte against the daily standard.

11.11. Evaluate the QA samples as outlined in Section 12

11.11.1. Daily GC/MS calibration verification, BS criteria, and the MB must demonstrate the system is free of interferences, before analyzing samples.

11.11.2. If the analysis shows the sample to have a concentration of analytes that exceed their highest standard, the sample must be rerun at a dilution. Analyst considerations for chromatographic “system overload” are analytes that are above the linear range, saturation of the mass spectrometer, chromatography overload, or analyte/interference carryover. Professional judgment must be used by the analyst as to the modification of the analytical sequence. If system contamination is present, an OFW blank must be analyzed. If the blank analysis is not free of analytes/interferences, the system should undergo maintenance, such as baking the trap or purging with methanol to decontaminate the system. If a blank is not run, as with auto-samplers, the following sample must be checked for carryover and rerun if it contains the same compounds which showed saturation. This must continue until no analyte is detected > ½ the RL.

11.12. Export data to Element.

12. Data Analysis and Calculations

12.1. Quantitative analysis

12.1.1. It is the operator’s responsibility to verify all compound identifications performed by the GC-MS data system. Use retention time, spectral data, data system calculated fit, and the operator’s expertise to determine whether analytes found by the system are real.

12.1.2. When a compound has been identified, the quantitation of that compound will be based on the integrated abundance from the EICP of the primary characteristic ion. Quantitation will take place using the internal standard technique. The internal standard used shall be the one nearest the retention time of that of a given analyte.

12.1.3. If secondary ion quantitation is necessary due to interference, then a short quantitation report list is generated. This quantitation contains the integrated areas of the affected compounds, based on the secondary ion(s) for that compound, and of the relevant internal

standards. Identical reports must be generated for the sample with interference and for the relevant initial calibration verification. The report for the initial calibration verification is used to generate a relative response factor for the affected compound based on its secondary ion. This relative response factor is then used in the calculations for that compound in the affected sample. The short quantitation report may be hand calculated by the analyst as long as it is signed and dated by the analyst.

12.1.4. The concentration of each identified analyte in the sample is calculated as follows:

12.1.4.1. Aqueous samples

Concentration (µg/L) =	$\frac{(Ax)(Is)}{(Ais)(RF)(VO)}$
where:	
Ax = Area of characteristic ion for compound being measured.	
Is = Amount of internal standard injected (ng)	
Ais = Area of characteristic ion for the internal standard.	
RF = Response factor for compound being measured.	
VO =Volume of water purged (mL), taking into consideration any dilutions made.	

12.1.5. Sediment /Soil, Sludge, and Waste:

12.1.5.1. High-concentration:

Concentration (µg/Kg) =	$\frac{(Ax)(Is)(Vt)}{(Ais)(RF)(Vi)(Ws)}$
where:	
Ax = Area of characteristic ion for compound being measured.	
Is = Amount of internal standard injected (ng)	
Vt = Volume of total extract (L) (use 5,000µL or a factor of this when dilutions are made).	
Ais = Area of characteristic ion for the internal standard.	
RF = Response factor for compound being measured.	
Vi = Volume of extract added (L) for purging	
Ws = Weight of sample extracted or purged (g). The wet weight or dry weight may be used depending upon the scientific applications of the data.	

12.1.6. Low-concentration

Concentration (µg/Kg) =	$\frac{(Ax)(Is)}{(Ais)(RF)(Ws)}$
where:	
Ax = Area of characteristic ion for compound being measured.	
Is = Amount of internal standard injected (ng)	
Ais = Area of characteristic ion for the internal standard.	
RF = Response factor for compound being measured.	
Ws = Weight of sample extracted or purged (g). The wet weight or dry weight may be used depending upon the scientific applications of the data.	

12.1.7. Sediment/soil samples are generally reported on a dry weight basis (sludge and wastes are also reported on a dry weight basis). In either instance, the percent dry weight of the sample should be reported along with the data.

12.1.8. Background organic material in sample extracts, usually due to hydrocarbons typically manifests itself in the form of a broad peak or peaks in the chromatogram. When mandated by project-specific requirements, it is necessary to provide both a tentative identification and an approximate concentration for such peaks, utilizing the following procedures.

12.1.9. A tentative spectral identification for such a peak is established by comparison of multiple spectra from the peak with those in the NIST library. A minimum of three un-enhanced scans, one each from near the beginning, middle and end of the peak shall be used. An EICP containing the three most abundant ions common to each of the three spectra shall be plotted for the region of the chromatogram encompassing the peak.

12.2. Analysis records

12.2.1. Each analytical run will be recorded in the associated Element sequence in PDF form. PDFs of the Element sequence, target run log, target manual integrations log, and the target security log will be attached to the sequence (see appendix 20.5). The MS EM level, column ID, and tune file ID must be recorded in the sequence user fields. Sample pH and container IDs will be recorded in the batch bench sheet and a batch PDF showing the sample pH and container IDs will be attached to the batch. For soil samples, the PDF should show the %total solids rather than the pH.

12.2.2. Soil extractions and 5035 analyses are noted on the Volatile Organics Extraction Bench Sheet 8043F, which is to be scanned and attached to the Element batch.

12.2.3. When total solids are performed by the volatiles staff, they are recorded on the Total Solids bench Sheet 5050F, which is then scanned to the associated Element sequence.

13. Method Performance

13.1. The QA department measures method performance using a combination of continuing QLS studies, quarterly Verification standards, performance evaluation samples, standard reference materials, and the monitoring of surrogate and spike recoveries.

13.1.1. Detection limits- the LOD for all analytes quantitated using this SOP are set using the low point of the initial calibration curve and validated by QLS studies.

13.1.2. QLS studies are performed each quarter for each analyte by each preparatory and analytical method.

13.1.3. LOD and LOQ values may be found for each analyte on the ARI's Web Site

13.2. Laboratory precision and bias measurements are performed by monitoring surrogate

and spike recoveries in samples and quality control samples.

13.2.1. Control limits are calculated from these recoveries.

13.2.2. These control limits are disseminated to the bench chemists and Element administrator for use in monitoring method performance in real time.

13.2.3. As these limits are updated regularly, their dynamic nature prevents their inclusion in this SOP. However, they may be found on the ARI's Web Site.

13.3. Method performance must be re-evaluated every time there is a change in instrument type, personnel or method. Method performance will be demonstrated using the Demonstration of Capability (DOC) procedure described in Appendix 2.2 of ARI SOP 1017S. A certification statement and all raw data from the DOC will be forwarded to QA for approval and archive. Each DOC must be documented in the instrument maintenance logbook.

13.4. This method should be performed only by experienced GC analysts, or under the close supervision of such analysts.

14. Pollution Prevention

14.1. A hazardous waste satellite accumulation station is provided for disposal of all solvent or potentially hazardous samples.

14.2. All syringe rinsing must be performed over charcoal to minimize the exposure of the environment to solvent.

14.3. All GC split vents will be connected to an exhaust vent.

14.4. All MS vacuum pumps will have a charcoal exhaust filter.

14.5. Autosampler waste is neutralized in the large neutralization tank in the warehouse.

14.6. Charcoal containers must be kept closed when not in use to prevent fugitive vapors from escaping and eliminate the possibility of spilling contents.

14.7. All spent vials are placed into the 'Autosampler Vials' Satellite Accumulation waste drum for proper disposal after analysis is finished.

15. Data Assessment and Acceptance Criteria for Quality Control Measures

15.1. Requirements relating to initial and continuing calibration are detailed in Section 10 of this document.

15.2. Method Blanks- The method blank must contain less than 1/2 the method reporting limit of the targeted analytes or corrective action is required.

15.3. Internal Standards- All samples' internal standard EICP areas following the initial calibration verification standard must meet the technical acceptance criteria listed in Section 9.

15.4. Surrogate Recoveries

15.4.1. All method blanks, blank spikes, matrix spikes, matrix spike duplicates, duplicates or other

samples must have acceptable surrogate recoveries. Surrogate recoveries are considered unacceptable when:

15.4.1.1. Any surrogate has a recovery that is outside ARI or project specific control limits.

15.4.2. These requirements do not apply to subsequent analysis of samples where a prior analysis of the sample shows unacceptable surrogate recovery. This may demonstrate a matrix effect.

15.4.3. When mandated by contract-specific requirements, corrective actions must be performed in response to failure to meet surrogate acceptance criteria, even when we meet in house limits.

15.4.4. Surrogate recovery acceptance windows are ideally determined statistically from method and matrix specific laboratory data updated on a periodic basis. Certain methods or clients may specify project specific surrogate recovery acceptance windows.

15.4.5. Surrogate acceptance criteria are both matrix and concentration level specific (e.g. low level vs. medium level soils). When analyzing matrices or concentration levels for which no acceptance criteria are available, the closest approximation of available acceptance criteria may be provided as estimates for advisory purposes only.

15.5. Blank spikes (BS)

15.5.1. The BS recovery values should fall within the specified recovery acceptance limits. If an BSD is performed then relative percent difference (RPD) acceptance limits may also apply, if available.

15.5.2. BS recovery acceptance windows are ideally determined statistically from method and matrix-specific laboratory data updated on a periodic basis. Project or method specific limits may supersede laboratory acceptance criteria.

15.5.3. Evaluate BS/BSD RPD and note any deviation >30% in the reviewer checklist.

15.6. Matrix Spike/Matrix Spike Duplicates (MS/MSD)

15.6.1. Matrix Spike/Matrix Spike Duplicate recovery values should fall within the specified recovery acceptance limits. If a MSD is performed then relative percent difference (RPD) acceptance limits may also apply, if available.

15.6.2. MS/MSD recovery and RPD acceptance is advisory and data should not necessarily be rejected based upon MS/MSD recovery. MS/MSD recovery should be compared to BS/BSD recovery to determine if recovery trends are present. Certain projects or clients may require project specific MS/MSD recovery and RPD acceptance windows.

15.6.3. Evaluate MS/MSD RPD and note any deviation >30% in the reviewer checklist.

15.7. Holding Times

15.7.1. Samples should be run within holding times (seven days for unpreserved water samples

and fourteen days for solid samples, Methanol extracts and preserved water samples).

15.7.2. In the event that re-analysis due to an out of control event requires that samples be re-analyzed after their holding time has elapsed the analyst should analyze and report both data sets, whenever practical, distinguishing between the initial analysis and re-analysis on all deliverables. This will document that the samples were originally analyzed within holding times and may allow for comparisons that will determine whether any of the more volatile analytes were lost in the interval between analyses.

16. Corrective Actions for Out of Control Events

16.1.1. Corrective actions may include any, but are not limited to, the following:

16.1.2. Narration – the failure and the extent of the failure (i.e. the percent deviation from the expected value) will be described in the reviewer checklist.

16.1.3. Reevaluation – the data will be reconsidered by the analyst and then the analyst will corroborate with a peer analyst or supervisor to confirm or revise the initial evaluation.

16.1.4. Repreparation – the remaining unanalyzed aliquot of the extract is transferred to a new vial and analyzed.

16.1.5. Reanalysis – if available another vial or aliquot of the sample is run on the gas chromatograph.

16.1.6. Re-extraction – a portion of the remaining sample is extracted.

16.1.7. Instrument Maintenance – this will vary with the problem experienced and the analyst's experience and a description of the maintenance performed will be documented in ELEMENT.

16.1.8. Recalibration – a new initial calibration is evaluated and the associated samples reanalyzed.

16.1.9. Revised data submission – if it is determined through reevaluation or reanalysis that an error was made and subsequently corrected then the data will be resubmitted with the appropriate corrections and explanation for data review. Both the original and finalized data will be provided for data review.

16.1.10. Formal corrective action entry – formal corrective actions are entered into the ARI database, when an out of control event cannot be remedied through the above corrective action process.

16.2. When an Initial Calibration for an analyte exceeds 20% RSD or .990 R^2

16.2.1. Examine the initial calibration analyses. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.2.1.1. When the failure appears to be the result of an improperly prepared calibration

standard, re-prepare the standard and reanalyze it. Reanalyzing or replacing a single standard must NOT be confused with the practice of discarding individual calibration results for specific target compounds in order to pick and choose a set of results that will meet the RSD or correlation criteria for the linear model. The practice of discarding individual calibration results is addressed as a fourth alternative option, and is very specific as to how a set of results are chosen to be discarded. If a standard is reanalyzed, or a new standard is analyzed, then ALL of the results from the original analysis of the standard in question must be discarded. Further, the practice of running additional standards at other concentrations and then picking only those results that meet the calibration acceptance criteria is EXPRESSLY PROHIBITED, since the analyst has generated data that demonstrate that the linear model does not apply to all of the data.

16.2.1.2. If the analyte is outside 20% and is an active analyte then proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.3. When an Initial Calibration Verification (ICV) fails:

16.3.1. At the discretion of the analysts, a second ICV may be immediately run after the failing ICV. If the second ICV meets all ICV criteria then the sequence may begin.

16.3.2. If the second inject6ion of the ICV fails, perform the appropriate corrective action(s) from Section 16.1 and re-calibrate the instrument.

16.3.3. DoD-QSM requires that %D for all analytes in the ICV or CCV be ≤ 20% (50% for end of batch CCV). For DoD analysis, immediately analyze two additional consecutive ICVs.

16.3.3.1. When both of these ICVs meet acceptance criteria, the analytical sequence may be continued.

16.3.3.2. If either of the two CCVs fail or their analysis cannot be run, perform corrective actions and repeat the analytical sequence.

16.3.3.3. If a CCV is used both as an ICV and CCV (in the middle of an analytical sequence) then the ICV requirements must be applied.

16.3.4. When a Continuing Calibration Verification (CCV) fails:

16.3.4.1. Perform any appropriate corrective action(s) from Section 16.1 if not a DoD-QSM project.

16.3.4.2. DoD-QSM requires that %D for all analytes in the CCV be ≤ 50%. For DoD analyses, immediately analyze two additional consecutive CCVs.

16.3.4.2.1. When both CCVs meet acceptance criteria, samples analyzed since the last acceptable CCV may be reported and the analytical sequence continued.

16.3.4.2.2. If either fails or if two consecutive CCVs cannot be run, perform corrective

actions and repeat the analytical sequence.

16.4. Internal Standards

16.4.1. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.4.1.1. If the calculations were incorrect, correct the calculations and verify that the internal standard response met their acceptance criteria.

16.4.1.2. If the internal standard compound spiking solution was improperly prepared, concentrated, or degraded, re-prepare solutions and re-extract/reanalyze the samples.

16.4.1.3. If the instrument malfunctioned, correct the instrument problem and reanalyze the sample extract. If the instrument malfunction affected the calibration, recalibrate the instrument before reanalyzing the sample extract.

16.4.1.4. If the above actions do not correct the problem, then the problem may be due to a sample "matrix effect".

16.5. Surrogates

16.5.1. Examine the bench sheet to verify spiking levels are correct.

16.5.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.5.2.1. If the above actions do not correct the problem, then the problem may be due to a sample matrix effect.

16.6. Method Blanks- Corrective action for a method blank which fails acceptance criteria may involve re-preparation of a secondary method blank and/or "B" flagging of the associated sample data. Each occurrence will be evaluated on an individual basis upon consultation with the Project Manager, the client, the Laboratory Supervisor, and the Laboratory Manager. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.7. Blank spikes

16.7.1. Examine the bench sheet to verify spiking levels are correct.

16.7.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.8. Matrix Spike/Matrix Spike Duplicates

16.8.1. Examine the bench sheet to verify spiking levels are correct.

16.8.2. Recoveries are advisory and should not necessarily result in re-extraction.

16.8.3. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.9. Sample Dilution- Should the quantitated value of any analyte exceed the working range of the curve, a dilution must be performed such that the analyte’s quantitated value is within the curve range.

16.9.1. All dilutions should keep the response of the major constituents in the upper half of the linear range of the curve.

16.9.2. When peaks from an analyte saturate the detector:

16.9.2.1. The analyst must flag all affected analytes with an S flag.

16.9.2.2. The analyst should evaluate samples following a saturation or over range hit to determine if carry over has occurred.

16.10. In particular circumstances, the Project Manager (PM) may decide that meeting QC limits may be of relatively little significance when considered against other project issues, such as data usability and turn-around-time. Such a decision is particularly likely when initial calibration verification responses are too high but there are no analytes identified in the samples (detection limits will not be compromised since response has improved). QC criteria specified in the work plan will be considered by the Project Manager.

16.10.1. The samples need not be re-analyzed if the PM so instructs the analyst. The analyst should have the PM initial all such decisions. It is preferable that the Client be consulted, but that decision is made by the PM. (See ARI Project Management SOP #005S)

16.10.2. All QC limit issues (including initial calibration verification and continuing calibration limits and all QC recovery limits) may be decided by the PM, the data reviewer, and/or GC Supervisor, preferably after consultation with the Client.

16.11. Mass Spectrometer Tuning

16.11.1. When the MS does not produce an acceptable mass spectrum when injected with 5 to 50 µg/mL of BFB, re-inject the BFB. If the spectrum again fails to meet the criteria found in Appendix 20.4, the MS should be re-tuned.

16.11.2. If the re-tuned mass spectrum still fails to meet the criteria found in Appendix 20.4, the GC-MS may require maintenance. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.12. Holding blanks should meet the same criteria as the method blanks detailed below.

16.12.1. Corrective action must be taken when holding blank contamination is greater than ½ the method reporting limits for all analytes except for acetone and methylene chloride.

16.12.2. Corrective action must also be taken if Detections of acetone and methylene chloride are > the Method reporting limit.

16.12.3. Holding blanks requiring corrective action must also be submitted to the QA department for further review.

17. Contingencies for Handling Out-of-Control or Unacceptable Data

17.1. See Section 16.2 for guidance on dealing with out-of-control initial calibrations.

17.2. See Section 16.3 for guidance on dealing with out-of-control initial calibration verifications.

17.3. See Section 16.4 for guidance on dealing with internal standard out-of-control events.

17.4. See Section 16.5 for guidance on dealing with surrogate out-of-control events.

17.5. See Section 16.6 for guidance on dealing with method blank related out-of-control events.
17.6. See Section 16.7 for guidance on dealing with BS/BSD related out-of-control events.
17.7. See Section 16.8 for guidance on dealing with MS/MSD related out-of-control events.
17.8. See Section 16.9 for guidance on dealing with over range samples.
17.9. See Section 16.10 for guidance on dealing with project managers.
17.10. See Section 16.11 for guidance on dealing with out-of-control tuning events.
17.11. See Section 16.12 for guidance on holding blanks.

18. Waste Management

18.1. All sample vials, standard vials and extract vials containing Methanol must be disposed of by placing them in the 'Methanol Vials' satellite accumulation hazardous waste drum. No vials may be thrown in the trash or receptacles not expressly designated for this purpose.
18.2. All solvents must be disposed of by pouring them out over charcoal. No solvent may be poured down the drain or disposed of in any other non-hygienic manner.
18.3. All spent charcoal must be disposed of by placing it in the 'Solvent Contaminated Solids' hazardous waste drum located in the Central Accumulation Area (Bay).
18.4. Autosampler waste is neutralized in the large neutralization tank in the warehouse.
18.5. All acid preserved spent vials are placed into the 'Autosampler Vials' Satellite Accumulation waste drum for proper disposal after analysis is finished.
18.6. Waste must not be accumulated in the fume hoods and must be disposed of at the appropriate waste disposal location.

19. Method References

19.1. "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)": Method 8260D Revision 4, February 2017.
19.2. EPA Contract Laboratory Program Statement of Work for Organic Superfund Methods -Multi-Media, Multi-Concentration SOM02.2, August, 2014.
19.3. "Determinative Chromatographic Separations": Method 8000D, Test Methods for Evaluating Solid Waste (SW-846), Revision 5, March, 2018.
19.4. Department of Defense (DoD) Quality Systems Manual – Version 5.0 July 2013
19.5. "Sample Preparation for Volatile Organic Compounds" EPA Method 5000, Revision 0, December 1996
19.6. "Method 624.1 – Purgeables", Appendix A to CFR Part 136, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. December 2016
19.7. "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)": Method 8260B Revision 2, December 1996.

20. Appendices

20.1. Appendix 20.1: Quality Control Requirements

20.2. Appendix 20.2: 8260D target analyte list

20.3. Appendix 20.3: BFB ion abundance criteria

20.4. Appendix 20.4: Chromatogram of Typical VOA calibration standard

20.5. Appendix 20.5: Example VOA Sequence Log

20.6. Appendix 20.6: Example Batch Attachment

20.7. Appendix 20.7 Sample Screening

20.8. Appendix 20.8: Dry weight determination

20.9. Appendix 20.9: Tentatively Identified Compounds

20.10. Appendix 20.10: Pea Bubble Chart

20.11. Appendix 20.11: Synchronized SIM scan/full scan analysis

20.12. Appendix 20.12: Modifications Required for Method 624.1

20.13. 624.1 BS and MS/MSD Limits

Appendix 20.1 - Method 8260D Quality Control Requirements

Appendix 20.1 - Method 8260D Quality Control Requirements					
QC Check	**Minimum Frequency**	**Acceptance Criteria**	**Corrective Action**	**Flagging Criteria**	**Comments**
Demonstrate acceptable analyst capability	Prior to using any test method and at any time there is a significant change in instrument type, personnel, or test method (see ARI SOP 1017S)	QC acceptance criteria published by DoD, if available; otherwise method specified criteria.	1) Recalculate results 2) Locate and correct the source of the problem and repeat the test for all parameters of interest.	Not applicable (NA)	This is a demonstration of ability to generate acceptable accuracy and precision using four replicate analyses of a QC check sample (e.g., BS or PT sample) as described in ARI SOP 1017S. An analyst must complete a successful demonstration of capability before analyzing client samples
Method detection limit (MDL) study	At initial set-up and subsequently once per 12 month period.	See 40 CFR 136B. MDL verification checks must produce a signal at least 3 times the instrument's noise level.	Run MDL verification check at higher level and set MDL higher or reconduct MDL study	NA	Samples cannot be analyzed without a valid MDL.
Tuning	Prior to calibration.	Refer to method for specific ion criteria. See appendix 20.3	Retune instrument and verify. Rerun affected samples.	Flagging criteria are not appropriate	Problem must be corrected. No samples may be accepted without a valid tune.
Evaluation of relative retention times (RRT)	With each sample	RRT of each target analyte in each calibration standard within ± 0.06 RRT units of the daily CCal	Correct problem, then rerun CCal.	Flagging criteria are not appropriate.	
Minimum five-point Initial calibration for all analytes (ICAL)	Initial calibration prior to sample analysis	Option 1: RSD for each analyte ≤ 20% Option 2: linear least squares regression $r^2 > 0.99$ Option 3: non-linear regression - coefficient of determination (COD) $r^2 \geq 0.99$ (Max 10% of target analytes may fail) (6 points shall be used for second order)	Correct problem then repeat initial calibration.	Flagging criteria are not appropriate.	Problem must be corrected. No samples may be run until ICAL has passed.
Second source calibration verification	Once after each initial calibration	Value of second source for all analytes within ± 30% of expected value (initial source)	Correct problem, verify second source standard. Rerun verification. If that fails, correct problem and repeat ICal	Flagging criteria are not appropriate.	Problem must be corrected. No samples may be run until calibration has been verified.
Retention time established for all analytes and surrogates	Once per ICAL and at the beginning of the analytical shift	Position shall be set using the midpoint standard of the calibration curve or the value in the ICV run at the beginning of the analytical shift.	Same	NA	NA

Appendix 20.1 - Method 8260D Quality Control Requirements

QC Check	Minimum Frequency	Acceptance Criteria	Corrective Action	Flagging Criteria	Comments
Calibration verification (CV)	Daily, before sample analysis, and every 12 hours of analysis time	%Difference/Drift for all target analytes: ≤ 20%D (Note: D = difference when using RFs or drift when using least squares regression or non-linear calibration.) Up to 20% of analytes may exceed ≤ 20%D	Correct problem, then rerun CV. If that fails, repeat initial calibration.	DoD: Apply Q-flag if no sample material remains and analyte exceeds criteria. ARI: Apply Q-flag to any analytes that exceed ≤ 20%D	.
Internal standards verification	In all field samples and standards	Retention time ± 30 seconds from retention time of the midpoint standard in the ICAL EICP area within - 50% to + 100% of ICAL midpoint standard	Inspect mass spectrometer and GC for malfunctions. Reanalysis of samples analyzed while system was malfunctioning is mandatory.	If corrective action fails in field samples, apply Q-flag to analytes associated with the non-compliant IS. Flagging criteria are not appropriate for failed standards.	Sample results are not acceptable without a valid IS verification.
Method blank	One per preparatory batch	No analytes detected > ½ RL. For common laboratory contaminants, no analytes detected ≥ 5 X the RL.	Correct problem, if required, reprep then reanalyze method blank and all samples processed with the contaminated blank.	Apply B-flag to all results for the specific analyte(s) in all samples in the associated preparatory batch	
Blank spike (BS) containing all reported analytes & surrogates	One BS per preparatory batch	QC acceptance criteria specified published in ARI's LQAP.	Correct problem, then reprep and reanalyze the BS and all samples in the associated batch, if sufficient sample material is available	If corrective action fails apply Q-flag to specific analyte(s) in all samples in the associated preparatory batch	
Matrix spike (MS)	One MS/MSD per preparatory batch per matrix when sufficient sample is available	For matrix evaluation, use QC acceptance criteria specified by for BS.	Examine the project-specific DQOs. Contact the client as to additional measures to be taken.	For the specific analyte(s) in the parent sample, apply *-flag if acceptance criteria are not met.	For matrix evaluation only. If MS results are out of control, evaluated data to determine the source of difference and to determine if there is a matrix effect or analytical error.
Surrogate spike	All field and QC samples	QC acceptance criteria specified by DoD, if available; otherwise method-specified criteria or laboratory's own in-house criteria	For QC and field samples, correct problem then reprep and reanalyze all failed samples for failed surrogates in the associated preparatory batch, if sufficient sample is available. If obvious chromatographic interference with surrogate is present, reanalysis may not be necessary.	For the specific analyte(s) in all field samples collected from the same site matrix as the parent, apply *-flag if acceptance criteria are not met. For QC samples, apply Q-flag to specific analyte(s) in all samples in the associated preparatory batch.	Alternative surrogates are recommended when there is obvious chromatographic interference.
Results report-ed between LOD & LOQ	NA	NA	NA	Apply J-flag to all results between LOD and LOQ.	

Appendix 20.2
ARI's Routine Method 8260D Target Analytes
Internal Standards, Quantitation Ions, and Calibration Criteria

Internal Standard Associated Analyte[1]	CAS Number	Primary Ion	Secondary Ion(s)	Min RRF	Max %RSD	Max %D
Pentafluorobenzene (IS)[1]				--	--	--
Acetone	67-64-1	43	58	0.01	20	20
Acrolein	107-02-8	56	55, 58	0.01	20	20
Acrylonitrile	107-13-1	53	52, 51	0.01	20	20
Bromochloromethane	74-97-5	128	49, 130	0.01	20	20
Bromoethane	74-96-4	108	110		20	20
Bromomethane	74-83-9	94	96	0.01	20	20
2-Butanone	78-93-3	43	57, 72	0.01	20	20
Carbon disulfide	75-15-0	76	78	0.01	20	20
Chloroethane	75-00-3	64	66	0.01	20	20
Chloroform	67-66-3	83	85	0.02	20	20
Chloromethane	74-87-3	50	52	0.01	20	20
Dibromofluoromethane (surrogate)	1868-53-7	111	113	0.01	20	20
Dichlorodifluoromethane	75-71-8	85	87	0.01	20	20
1,1-Dichloroethane	75-34-3	63	65, 83	0.02	20	20
1,1-Dichloroethene	75-35-4	96	61, 98	0.05	20	20
cis-1,2-Dichloroethene	156-59-2	96	61, 98	0.01	20	20
trans-1,2-Dichloroethene	156-60-5	96	61, 98	0.01	20	20
2,2-Dichloropropane	78-87-5	77	97	0.01	20	20
n-Hexane	110-54-3	56	57	0.01	20	20
Methyl tert butyl ether	1634-04-4	73	57	0.01	20	20
Methylene chloride	75-09-2	84	86, 49	0.01	20	20
1,1,1-Trichloroethane	71-55-6	97	--	0.01	20	20
Trichlorofluoromethane	75-69-4	101	103	0.01	20	20
Vinyl acetate	108-05-4	43	86	0.01	20	20
Vinyl chloride	75-01-4	62	64	0.01	20	20
1,2-Dichloroethane -d4 (surrogate)	107-06-2	62	98	0.01	20	20
1,1,2-trichloro -1,2,2-trifluoroethane	76-13-1	101	85, 151	0.01	20	20
Iodomethane	74-88-4	142	127	0.01	20	20
Chlorobenzene-d5 (IS)	108-90-7	117	82	--	--	--
Chlorodibromomethane	124-48-1	129	127	0.02	20	20
Chlorobenzene	108-90-7	112	77, 114	0.05	20	20
1,3-Dichloropropane	142-28-9	76	78	0.01	20	20
Ethylbenzene	100-41-4	91	106	0.01	20	20
2-Hexanone	91-78-6	43	58, 57, 100	0.01	20	20
Styrene	100-42-5	104	78	0.03	20	20

Internal Standard Associated Analyte[1]	CAS Number	Primary Ion	Secondary Ion(s)	Min RRF	Max %RSD	Max %D
1-chlorohexane	544-10-5	91	55	0.01	20	20
Methylcyclohexane	108-87-2	83	55	0.01	20	20
Cyclohexane	110-82-7	84	56	0.01	20	20
Cyclohexanone	108-94-1	55	42, 98	0.01	20	20
1,1,1,2-Tetrachloroethane	630-20-6	131	133, 119	0.01	20	20
Tetrachloroethene	127-18-4	166	164, 131, 129	0.02	20	20
M + p-Xylene	108-38-3, 106-42-3	106	91	0.01	20	20
o-Xylene	95-47-6	106	91	0.03	20	20
4-Bromofluorobenzene(surrogate)	400-00-4	95	174	0.01	20	20
1,4-Difluorobenzene (IS)		114	88	0.01	20	20
Benzene	71-43-2	78	52, 77	0.05	20	20
Bromodichloromethane	75-27-4	83	85	0.01	20	20
Toluene-d8(surrogate)	108-88-3	98	100	0.01	20	20
Carbon tetrachloride	56-23-5	117	119	0.01	20	20
2-Chloroethyl vinyl ether	110-75-2	63	65, 106	0.05	20	20
1,2-Dibromoethane	106-93-4	107	109, 188	0.01	20	20
Dibromomethane	74-95-3	93	95, 174	0.01	20	20
1,2-Dichloroethane	107-06-2	62	98	0.01	20	20
1,2-Dichloropropane	78-87-5	63	112	0.01	20	20
1,1-Dichloropropene	563-58-6	75	110, 77	0.01	20	20
cis-1,3-Dichloropropene	10061-01-5	75	77, 110	0.02	20	20
trans-1,3-Dichloropropene	10061-02-6	75	77, 110	0.01	20	20
4-Methyl-2-pentanone	108-10-1	58	43, 100	0.01	20	20
2-Pentanone	107-87-9	86	43	0.01	20	20
Toluene	108-88-3	92	91	0.04	20	20
Trichloroethene	79-01-6	130	132, 95	0.02	20	20
1,1,2-trichloroethane	79-00-5	97	99, 83	0.01	20	20
1,4-Dichlorobenzene-d4 (IS)	106-46-7	150	152	0.01	20	20
Bromobenzene	108-86-1	159	77, 158	0.01	20	20
Bromoform	75-25-2	173	175, 171	0.01	20	20
n-Butylbenzene	104-51-4	91	92, 134	0.01	20	20
trans-1,4-dichloro 2-butene	110-57-6	53	75	0.01	20	20
d4-1,2-Dichlorobenzene(surrogate)	95-50-1	150	152	--	--	--
sec-Butylbenzene	135-98-8	105	134	0.01	20	20
tert-Butylbenzene	98-06-6	119	91, 134	0.01	20	20
2-Chlorotoluene	95-49-8	91	126	0.01	20	20
4-Chlorotoluene	106-43-4	91	126	0.01	20	20

Internal Standard Associated Analyte[1]	CAS Number	Primary Ion	Secondary Ion(s)	Min RRF	Max %RSD	Max %D
1,2-Dibromo-3-chloropropane	96-12-8	75	155, 157	0.005	20	20
1,2-Dichlorobenzene	95-50-1	146	111, 148	0.04	20	20
1,3-Dichlorobenzene	541-73-1	146	111, 148	0.06	20	20
1,4-Dichlorobenzene	106-46-7	146	111, 148	0.05	20	20
Hexachlorobutadiene	87-68-3	225	223, 227	0.01	20	20
Isopropyl benzene	98-82-8	105	120	0.01	20	20
p-Isopropyltoluene	98-87-6	119	134, 91	0.01	20	20
Naphthalene	91-20-3	128	129, 127	0.01	20	20
n-Propylbenzene	103-65-1	91	120	0.01	20	20
1,1,2,2-Tetrachloroethane	79-34-5	83	97, 85	0.03	20	20
1,2,3-Trichlorobenzene	87-61-6	180	145	0.01	20	20
1,2,4-Trichlorobenzene	120-82-1	180	97, 85	0.02	20	20
1,2,3-Trichloropropane	98-18-4	110	75, 77	0.01	20	20
1,2,4-Trimethylbenzene	95-63-6	105	120	0.01	20	20
1,3,5-Trimethylbenzene	95-63-6	105	120		20	20

1 – Compound designations: IS = Internal Standard, SS = Surrogate Standard

Appendix: 20.3
BFB ION ABUNDANCE CRITERIA

8260D SUGGESTED ION ABUNDANCE CRITERIA[1]

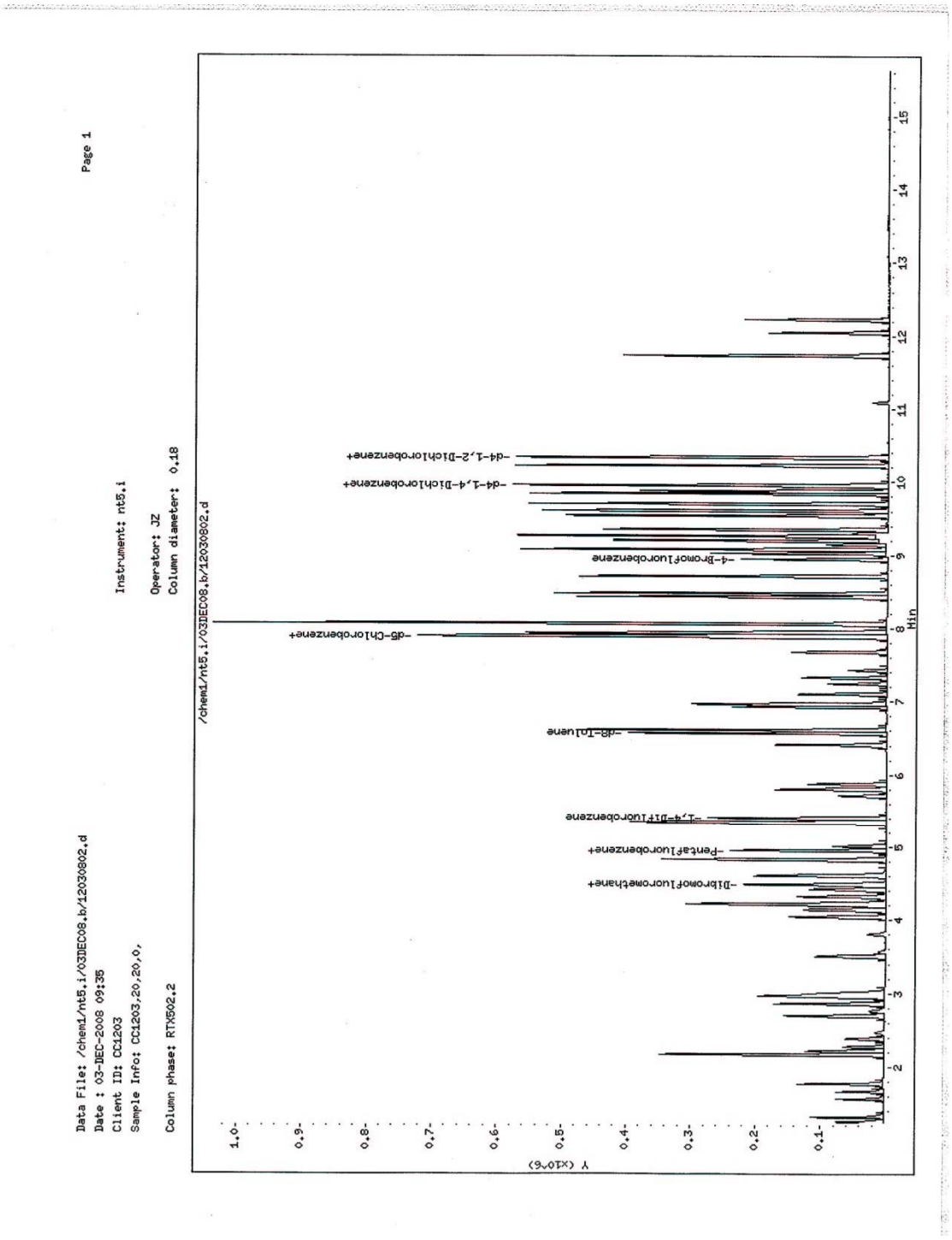
BFB MASS INTENSITY SPECIFICATIONS (4-BROMOFLUOROBENZENE)

Mass	Intensity Required (relative abundance)[2]
95	50-200% of mass 174
96	5.0 to 9.0% of mass 95[3] (5-15% when using H_2 carrier)
173	less than 2.0% of mass 174
174	50.0-200% of mass 95
175	5.0 to 9.0% of mass 174
176	95.0% -105% of mass 174
177	5.0 to 10% of mass 176

.

[1] Method 8260D allows the use of alternate abundance criteria, including CLP.
[2] Raw data is rounded to three significant figures and one or less decimal point before comparison to the abundance criteria.
[3] All ion abundances must be normalized to m/z 95, the nominal base peak, even though the ion abundances of m/z 174 may be up to 120% that of m/z 95.

Appendix 20.4
Chromatogram of Calibration Standard



Appendix 20.5
Example VOA Sequence Log

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE
SGF0182

Printed: 6/21/2018 12:49:03PM

Instrument: NT2 Element Column ID: 1295415 RTXV
Calibration ID: BF00032 Tune File: bfb.u
EM Voltage: 1847

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SGF0182-TUN1	MS Tune	QC		1	G003328	G003153	
SGF0182-CAL1	8260C 0.2	QC		2	G005421	G003153	
SGF0182-CAL2	8260C 0.5	QC		3	G005422	G003153	
SGF0182-CAL3	8260C 1.0	QC		4	G005423	G003153	
SGF0182-CAL4	8260C 2.0	QC		5	G005424	G003153	
SGF0182-CAL5	8260C 10	QC		6	G005425	G003153	
SGF0182-CAL6	8260C 20	QC		7	G005426	G003153	
SGF0182-CAL7	8260C 40	QC		8	G005427	G003153	
SGF0182-CAL8	8260C 80	QC		9	G005428	G003153	

seq_ARI_GCMS_Data.rpt

Page 1 of 1

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20180611.b

	Time	Filename	LabID	ClientID	Vial#	pH	DF								
1	0943	V206111801.D	RINSE				1								
2	1003	V206111802.D	TEST				1								
3	1048	V206111803.D	SGF0153-TUN1				1								
4	1123	V206111804.D	0.2TEST				1	5.16	311301	5.55	518059	7.52	468693	9.31	228363
5	1240	V206111805.D	SGF0-ICV1	ICV test			1	5.16	3017301	5.55	507572	7.52	453221	9.31	233310
6	1300	V206111806.D	BGF0-BSD1				1	5.16	290923	5.55	481002	7.52	427671	9.31	223293
7	1349	V206111807.D	RINSE				1	5.56	1849	7.63	4747	9.32	3771		
8	1409	V206111808.D	SGF0153-CAL1	0.2			1	5.16	271749	5.55	454417	7.52	414984	9.31	207952
9	1429	V206111809.D	SGF0153-CAL2	0.5			1	5.16	271899	5.55	457148	7.52	410243	9.31	214686
10	1450	V206111810.D	SGF0153-CAL3	1			1	5.16	276278	5.55	459832	7.52	420977	9.31	210152
11	1510	V206111811.D	SGF0153-CAL4	2			1	5.16	271219	5.55	442009	7.52	405187	9.31	209954
12	1530	V206111812.D	SGF0153-CAL5	10			1	5.16	266998	5.55	445870	7.51	404046	9.30	216598
13	1551	V206111813.D	SGF0153-CAL6	20			1	5.16	279239	5.55	466606	7.52	423545	9.30	223793
14	1611	V206111814.D	SGF0153-CAL7	40			1	5.16	284265	5.55	474676	7.52	418019	9.31	223786
15	1631	V206111815.D	SGF0153-CAL8	80			1	5.15	281556	5.55	472470	7.52	404986	9.31	213127
16	1651	V206111816.D	SGF0153-SCV1				1	5.16	275468	5.55	463596	7.52	422633	9.31	219775

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20180611.b

Instrument: nt2.i Date: 11-JUN-2018

Time	Filename	LabID	DF	Manually Integrated Compounds
0943	V206111801.D	RINSE	1	NO MANUAL INTEGRATION
1003	V206111802.D	TEST	1	NO MANUAL INTEGRATION
1046	V206111803.D	SGF0153-TUN1	1	NO MANUAL INTEGRATION
1123	V206111804.D	0.2TEST	1	Dichlorodifluoromethane, Trichlorofluoromethane,
1240	V206111805.D	SGF0-ICV1	1	Dichlorodifluoromethane,
1300	V206111806.D	BGF0-BSD1	1	NO MANUAL INTEGRATION
1349	V206111807.D	RINSE	1	NO MANUAL INTEGRATION
1409	V206111808.D	SGF0153-CAL1	1	Dichlorodifluoromethane, Vinyl Chloride, Bromomethane, Chloroethane, Trichlorofluoromethane, 1,1-Dichloroethen Carbon Disulfide, Acrylonitrile, Vinyl Acetate, Cis-1,2-Dichloroethene, Bromochloromethane, 2-Butanone 2-Pentanone, 2-Chloroethyl Vinyl Ether, Styrene, Trans-1,4-Dichloro 2-Butene,
1429	V206111809.D	SGF0153-CAL2	1	Dichlorodifluoromethane, Trichlorofluoromethane, 1,1-Dichloroethene, Carbon Disulfide, Iodomethane, Methylene Cis-1,2-Dichloroethene, 2-Pentanone, Trans-1.4-Dichloro 2-Butene,
1450	V206111810.D	SGF0153-CAL3	1	Dichlorodifluoromethane, Chloroethane, Trichlorofluoromethane, 1,1-Dichloroethene, Carbon Disulfide, Iodometha Bromoethane, Methylene Chloride, Vinyl Acetate, 2-Pentanone, Trans 1,3-Dichloropropene,
1510	V206111811.D	SGF0153-CAL4	1	Dichlorodifluoromethane, Trichlorofluoromethane, 1,1-Dichloroethene, Carbon Disulfide, Iodomethane, Bromoethan Methylene Chloride, Vinyl Acetate, Trans-1,4-Dichloro 2-Butene,
1530	V206111812.D	SGF0153-CAL5	1	Dichlorodifluoromethane, Trichlorofluoromethane, 1,1-Dichloroethene, Iodomethane, Bromoethane, Methylene Chlor
1551	V206111813.D	SGF0153-CAL6	1	Dichlorodifluoromethane, Chloroethane, Trichlorofluoromethane, 1,1-Dichloroethene, 112Trichloro122Trifluoroethane, Methylene Chloride,
1611	V206111814.D	SGF0153-CAL7	1	Dichlorodifluoromethane, Chloroethane, Trichlorofluoromethane, 1,1-Dichloroethene, Carbon Disulfide, Iodometha Bromoethane, Methylene Chloride,
1631	V206111815.D	SGF0153-CAL8	1	Trichlorofluoromethane, 1,1-Dichloroethene, Carbon Disulfide, Iodomethane, Bromoethane, Methylene Chloride, Pentafluorobenzene,
1651	V206111816.D	SGF0153-SCV1	1	Dichlorodifluoromethane, Chloroethane, 1,1-Dichloroethene, Iodomethane, Methylene Chloride,

Security Status Report

Date: 13-Jun-2018 07:16

V206111801.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111802.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111803.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111804.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111805.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111806.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111807.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111808.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111809.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111810.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111811.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111812.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111813.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111814.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111815.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111816.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111817.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111818.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111819.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111820.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111821.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111822.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111823.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111824.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111825.D	Data Locked	lanih, 13-Jun-2018 07:16
V206111826.D	Data Locked	lanih, 13-Jun-2018 07:16

Appendix 20.6
Example Batch Attachment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BENCH SHEET
BGF0426

Printed: 6/19/2018 8:57:44AM

Matrix: Water | **Prepared using: Volatiles - EPA 5030 (Purge and Trap)** | **Surrogate used: G003068**

Lab Number	Analysis	Prepared	Initial (mL)	Final (ml)	Spike ID	Source ID	ul Spike	ul Surrogate	pH	Extraction Comments
18F0250-01 D	8260C VOA	18-Jun-2018 11:32	10	10				1	2	
18F0250-01 D	8260C Gas (NWTPH)	18-Jun-2018 11:32	10	10				1	2	
18F0250-02 A	8260C Gas (NWTPH)	18-Jun-2018 11:32	10	10				1	2	
18F0250-02 A	8260C VOA	18-Jun-2018 11:32	10	10				1	2	
18F0250-03 B	8260C Gas (NWTPH)	18-Jun-2018 11:32	10	10				1	2	
18F0250-03 B	8260C VOA	18-Jun-2018 11:32	10	10				1	2	
18F0250-04 D	8260C VOA	18-Jun-2018 11:32	10	10				1	2	PB
18F0250-04 D	8260C Gas (NWTPH)	18-Jun-2018 11:32	10	10				1	2	PB
18F0250-05 A	8260C VOA	18-Jun-2018 11:32	10	10				1	2	PB
18F0263-01 C	8260C VOA	18-Jun-2018 11:32	0.05	10				1	2	Use Go No Go List
BGF0426-BLK1	QC	18-Jun-2018 07:32	10	10				1		
BGF0426-BLK2	QC	18-Jun-2018 07:32	10	10				1		
BGF0426-BS1	QC	18-Jun-2018 07:32	10	10	G004905		5	1		
BGF0426-BS2	QC	18-Jun-2018 07:32	10	10	G004481		2	1		
BGF0426-BSD1	QC	18-Jun-2018 07:32	10	10	G004905		5	1		
BGF0426-BSD2	QC	18-Jun-2018 07:32	10	10	G004481		2	1		

Spiking Witnessed By Date

Preparation Reviewed By Date

Extracts Received By Date

bch_ARI_with_pH.rpt

Page 1 of 1

Appendix 20.7
Sample Screening

1.1. Screening of the sample prior to purge-and-trap analysis will provide guidance on whether sample dilution is necessary, and will prevent contamination of the purge-and-trap system.

20.13.1. Aqueous Samples

20.13.1.1. Place an appropriate volume of aqueous sample in a 45 mL vial and fill the vial with organic free water (OFW). Analyze the sample as a normal sample and determine the appropriate dilution for final analysis.

20.13.2. Solid Samples (Soil & Sediment)

20.13.2.1. For screening soils, oils, and solid materials, place 1g of sample into a scintillation vial with 5mL VOA grade Methanol and vortex until well mixed. Dilute 100

µL of the methanol solution into 45 mL OFW. Analyze the sample as a normal sample and determine the appropriate dilution for final analysis.

20.13.3. Waste Samples

20.13.3.1. Water-miscible liquids are analyzed as water samples after first diluting them at least 50 fold with organic-free reagent water.

20.13.3.2. Initial and serial dilutions can be made in a 100mL volumetric flask with organic-free reagent water.

20.13.4. Alternatively, prepare dilutions directly in a 5mL syringe filled with organic-free reagent water by adding at least 180µL, but not more than 900µL, of liquid sample.

20.13.5. OVM may be used to determine approximate dilution levels.

Appendix 20.8
Dry Weight Determination

20.14. Determine the percent dry weight of the soil/sediment sample. Other wastes should be reported on a wet-weight basis.

20.14.1. Weigh 5-10g of the sample into a tared weighing dish.

20.14.2. Place the weighted sample in a 104 ± 2°C oven overnight (12 hour minimum).

20.14.3. Remove the sample from the oven and allow it to equilibrate to ambient temperature.

20.14.4. Calculate the sample per cent dry weight:

$$\% \text{ dry weight} = \frac{\text{sample weight dry (g)}}{\text{sample weight wet (g)}} \times 100$$

Appendix 20.9
Tentatively Identified Compounds

20.15. For samples containing components not associated with the calibration standards, a library search may be made for the purpose of tentative identification. The necessity to perform this type of identification will be determined by the purpose of the analyses being conducted. Computer generated library search routines should not use normalization routines that would misrepresent the library or unknown spectra when compared to each other. For example, the RCRA permit or waste delisting requirements may require the reporting of non-target analytes. Only after visual comparison of sample spectra with the nearest library searches will the mass spectral interpretation specialist assign a tentative identification. Guidelines for making tentative identification are:

20.15.1. Relative intensities of major ions in the reference spectrum (ions >10 % of the most abundant ion) should be present in the sample spectrum.

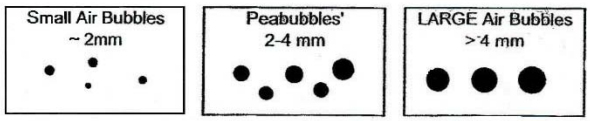
20.15.2. The relative intensities of the major ions should agree within ± 20%.

20.15.3. Molecular ions present in the reference spectrum should be present in the sample spectrum.

20.15.4. Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination or presence of co-eluting compounds.

20.15.5. Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or co-eluting peaks. Data system library reduction programs can sometimes create these discrepancies.

Appendix 20.10
Pea Size Bubble Reference



Appendix 20.11
Synchronous scan

Synchronous scanning may be utilized to produce both SIM scan and full scan data simultaneously during the same acquisition. This methodology requires the use of an Agilent 5975C MSD capable of synchronous scanning. The Agilent Chemstation will generate a .d data file format for each sample acquired. Each .d data file consists of two raw MS data files which are processed separately using both SIM scan and full scan methods. The data.ms file contains the full scan data and the datasim.ms file contains the SIM data. Typically an initial calibration is produced by acquiring all calibration levels for both SIM and full scan ranges and then applying the lowest 6 (or 7) calibration points to the SIM method and the highest 6 (or 7) calibration points to the full scan method. The SIM scan and full scan data are processed and stored in separate directories in Target™ and loaded into ELEMENT individually. Example: 10 different concentration of initial calibration standards are analyzed ranging from .01-80ug/L. The full scan initial calibration is produced by with the highest eight points ranging from .2-80ug/L. The SIM scan initial calibration is produced with the lowest eight calibration points ranging from .01-5ug/L. The total cycle time for the synchronous acquisition is designed to meet the method requirement of 1 second/scan or less using the formulae provided by Agilent:

Total cycle= 1/((1/a+1/b)*1.05)

Where a = total scan cycles per second

Where b = total sim cycles per second

Total cycle time will be optimized to ensure we are collecting between 5-10 scans for every chromatographic peak. Several advantages are realized with synchronous scan including better comparability between SIM and full scan data, fewer sample containers are required, and the requirement for SIM and full scan data is met in a single analysis. Please also see SOP #703S which provides more detail specific to the SIM component of the synchronous scan procedure.

Appendix 20.12

Modifications Required for EPA Method 624.1 (These modifications are only implemented when specifically requested by a client. Otherwise, Method 624.1 is analyzed as described previously in this SOP.)

1. The following BFB key ions and ion abundance criteria for Method 624.1 are substituted for those listed in Appendix 20.3 used for Method 8260D. (The method states that alternative tuning criteria from other published EPA reference methods may be used, provided method performance is not adversely affected.)

EPA 624.1 ION ABUNDANCE CRITERIA

BFB MASS INTENSITY SPECIFICATIONS (4-BROMOFLUOROBENZENE)

Mass	Intensity Required (relative abundance)
50	15.0 to 40.0% of mass 95
75	30.0 to 60.0% of mass 95
95	base peak, 100% relative abundance
96	5.0 to 9.0% of mass 95
173	less than 2.0% of mass 174
174	>50.0% of mass 95
175	5.0 to 9.0% of mass 174
176	>95.0% but <101% of mass 174
177	5.0 to 9.0% of mass 176

2. Initial calibration RSD for Method 625 must be RSD< 35% or R2 <.920 with no exceptions.
3. QC requirements for 624.1 are as follows: BFB, Blank Spike, and Blank.
4. The 12-hour shift begins after the analysis of the BFB, BS, and the blank and ends 12 hours later. The BFB, BS, and blank are outside of the 12-hour shift. The MS/MSD and samples are treated as samples and are analyzed within the 12-hour shift. The total shift, including BFB, LCS, and the blank is not to exceed 14 hours.
5. Blank Spike Requirements
   5.1. The BS must be from a source different from the source used for calibration.
   5.2. Blank spike and matrix spike recoveries verification for Method 624.1 must fall within the limits shown in appendix 20.12.13. Note that these limits are not in Element and must be evaluated manually.

5.3. A retest is allowed in the event of failure and, per 624.1, it may be prudent to analyze two BSs together and evaluate results of the second analysis against the QC acceptance criteria only if an analyte fails the first test.

6. Method Blank Requirements

6.1. The method blank passes QC requirements if no analytes of interest are found: 1) at a concentration greater than the MDL for the analyte, 2) at a concentration greater than 1/3 the regulatory compliance limit, or 3) at a concentration greater than 1/10 the concentration in a sample analyzed during the 12-hour shift.

6.2. A blank must also be analyzed after a sample containing a high concentration of an analyte or potentially interfering compound to demonstrate freedom from carry-over.

7. Sample Preservation

7.1. If acrolein is to be determined, analyze the sample within 3 days (for an unpreserved sample) or acidify the sample to pH 4-5 if a 14-day holding time is desired.

Appendix 20.13
624.1 BS and MS/MSD Limits

Table 7 – LCS (Q), DOC (s and $\bar{X}$), and MS/MSD (P and RPD) Acceptance Criteria [1]					
Analyte	Range for Q (%)	Limit for s (%)	Range for $\bar{X}$ (%)	Range for P_1, P_2 (%)	Limit for RPD
Acrolein	60-140	30	50-150	40-160	60
Acrylonitrile	60-140	30	50-150	40-160	60
Benzene	65-135	33	75-125	37-151	61
Benzene-d_6					
Bromodichloromethane	65-135	34	50-140	35-155	56
Bromoform	70-130	25	57-156	45-169	42
Bromomethane	15-185	90	D-206	D-242	61
2-Butanone-d_5					
Carbon tetrachloride	70-130	26	65-125	70-140	41
Chlorobenzene	65-135	29	82-137	37-160	53
Chloroethane	40-160	47	42-202	14-230	78
Chloroethane-d_5					
2-Chloroethylvinyl ether	D-225	130	D-252	D-305	71
Chloroform	70-135	32	68-121	51-138	54
Chloroform-^{13}C					
Chloromethane	D-205	472	D-230	D-273	60
Dibromochloromethane	70-135	30	69-133	53-149	50
1,2-Dichlorobenzene	65-135	31	59-174	18-190	57
1,2-Dichlorobenzene-d_4					
1,3-Dichlorobenzene	70-130	24	75-144	59-156	43
1,4-Dichlorobenzene	65-135	31	59-174	18-190	57
1,1-Dichloroethane	70-130	24	71-143	59-155	40
1,2-Dichloroethane	70-130	29	72-137	49-155	49
1,2-Dichloroethane-d_4					
1,1-Dichloroethene	50-150	40	19-212	D-234	32
1,1-Dichloroethene-d_2					
trans-1,2-Dichloroethene	70-130	27	68-143	54-156	45
1,2-Dichloropropane	35-165	69	19-181	D-210	55
1,2-Dichloropropane-d_6					
cis-1,3-Dichloropropene	25-175	79	5-195	D-227	58
trans-1,3-Dichloropropene	50-150	52	38-162	17-183	86
trans-1,3-Dichloropropene-d_4.					
Ethyl benzene	60-140	34	75-134	37-162	63
2-Hexanone-d_5					
Methylene chloride	60-140	192	D-205	D-221	28
1,1,2,2-Tetrachloroethane	60-140	36	68-136	46-157	61
1,1,2,2-Tetrachloroethane-d_2					
Tetrachloroethene	70-130	23	65-133	64-148	39
Toluene	70-130	22	75-134	47-150	41
Toluene-d_8					
1,1,1-Trichloroethane	70-130	21	69-151	52-162	36
1,1,2-Trichloroethane	70-130	27	75-136	52-150	45
Trichloroethene	65-135	29	75-138	70-157	48
Trichlorofluoromethane	50-150	50	45-158	17-181	84
Vinyl chloride	5-195	100	D-218	D-251	66
Vinyl chloride-d_3					

[1] Criteria were calculated using an LCS concentration of 20 µg/L

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

GC-MS Analysis of PAH/PCP
Method 8270E – Selective Ion Monitoring (SIM)

SOP 801S
Revision 012

Revision Date: 6/25/19
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Prepared by:

Peter Kepler, Van Spohn

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Brian N. Bebee, Laboratory Section Manager

Bob Congleton, Quality Assurance Manager

Annual Review

SOP Number: 801S

Title: GC-MS Analysis of PAH/PCP Method 8270E – Selective Ion Monitoring (SIM)

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

GC-MS Analysis of PAH/PCP Method 8270 – Selective Ion Monitoring (SIM)

1. Scope and Application

1.1. This procedure utilizes Method 8270E acquiring in the selected ion mode (8270E sim) to determine the concentration of selected semi volatile organic compounds in extracts prepared from various types of sediments, soils, solid waste matrices, tissues, and waters. See Appendix 20.2 for the compounds that may be determined using this method. EPA Method 8270E will be reported for State of California work.

1.2. Procedures described in this document allow the flexibility to meet the requirements of various analytical programs, including the EPA SW-846 methods and the Department of Defense Quality Systems Manual (DoD-QSM). Some text is directly from the referenced documents. The table in Appendix 20.1 outlines ARI's routine in-house acceptance criteria. DOD-QSM acceptance criteria are shown in Appendix B of DOD-QSM 5.3. Acceptance criteria for projects requiring modified DOD-QSM criteria are provided by the project manager and are project specific. Analysts are responsible for determining which QA program is applicable to a set of samples prior to beginning analyzes and complying with all project specific analytical requirements.

1.3. The reference methods for this procedure are listed in Section 19.

1.4. Method 8270E sim is used primarily in the analysis of polynuclear aromatic hydrocarbons (PAH), and Pentachlorophenol (PCP). Appendix 20.2 includes a list of compounds and their characteristic ions that have been evaluated on the specified GC/MS system. Detailed lists of project-specific compounds may be found in the LQAP for a given project. Other compounds may be analyzed if specifically requested.

1.5. Pentachlorophenol is an active analytes and subject to erratic chromatographic behavior, especially if the GC system is contaminated. Derivatization of PCP with Diazomethane is utilized by this method to reduce activity.

1.6. Estimated Method Reporting Limits (MRL)

Analysis code	Water MRL	Soil MRL
8270D-sim PAH	0.1µg/L	5.0µg/kg
8270D-sim PAH/PCP	0.1µg/L 0.5µg/L for PCP	5.0µg/kg 25µg/kg for PCP
8270D-sim PAH low	0.01µg/L	0.5µg/kg
8270D-sim Alkyl PAH	0.1-1.0µg/L	5.0-50µg/kg

1.7. This method is restricted to use by or under the supervision of analysts experienced in the use of gas chromatograph/mass spectrometers and skilled in the interpretation of mass spectra. Each analyst must demonstrate the ability to generate acceptable results with this method.
1.8. ARI routinely performs Method Detection Limit (MDL) studies for each extraction and analytical method performed using this SOP. The results of these studies help define the reporting limits of data generated. The results are kept by the QA department, and are distributed to the bench chemists and the ELEMENT administrator. For current MRLs and MDLs, see Element

2. Summary of Procedure

2.1. An aliquot of sample for matrices suitable for analysis by GC/MS SIM) is extracted by a matrix appropriate sample technique. Usually this aliquot will be 500 mL for aqueous samples and 10 grams for solid samples. Sample extraction will typically be by either continuous liquid-liquid extraction or separatory funnel extraction for aqueous samples and microwave for solid samples. The extracted sample is subjected to any appropriate cleanup and then concentrated. Final extract volume will normally be 0.5 mL for aqueous samples and either 0.5 or 1mL for solid samples. The extract is then delivered to Refrigerator 15.
2.2. After the instrument lab has assumed custody of the sample, it is injected onto the column of a properly calibrated GC/MS system for chromatographic determination. If the analyte PCP is to be determined, the extract is derivatized using diazomethane before chromatographic determination. Analyte identification is performed using the relative time of elution (RRT, relative to the appropriate internal standard) and comparison of mass spectra to a spectral library. Quantitation is performed by comparing the detector responses of each analytes' characteristic mass ion and internal standard characteristic mass ion to the responses of these ions in a calibration curve containing those analytes at known concentrations.

3. Definitions

3.1. SIM - Selected Ion Monitoring- a mode of data acquisition wherein the mass spectrometer is programmed to scan for a limited number of specific masses, increasing the amount of time spent searching for each of these masses.
3.2. Initial Calibration Verification (ICV): A process used to verify that the current instrument calibration is acceptable at the beginning of an analytical sequence

3.3. Continuing Calibration Verification (CCV): A process used to verify that the current instrument calibration is acceptable during or at the end of an analytical sequence.
3.4. Decafluorotriphenylphosphine, (DFTTP): used to demonstrate acceptable tuning parameters.

3.5. Method detection Limit (MDL): The lowest result that can reliably be distinguished in a matrix from a blank.

3.6. Extracted Ion Current Profile (EICP): A plot of the abundance of a specific ion as a function of time

3.7. Second Source Verification (SCV): A process used to verify that the current instrument verification is acceptable.

3.8. Internal Standard (IS): Internal standards are compounds added to each standard, sample, and QC sample such that their concentration is the same in each of these sample types. Target analyte response is normalized to the response of these internal standards.

3.9. Blank Spike (BS): A sample matrix, free from the analytes of interest, spiked with verified amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision or to assess the performance of all or a portion of the measurement system.

3.10. Blank Spike Duplicate (BSD): A replicate BS often used to assess the precision of an analytical method. When insufficient sample volumes exist to perform a required MS/MSD analysis, a BS/BSD may be performed to assess the precision of the analytical method. The BSD is prepared and analyzed identically to the BS.

3.11. Laboratory Information Management System (LIMS): Software used to compile and report final chromatographic data. The use of the term “Element” refers to the LIMS system.

3.12. Limit of Detection (LOD): The lowest result that can be reported while meeting method precision and accuracy requirements.

3.13. Method Reporting Limit (MRL): The lowest result that may be reported unqualified based upon the lowest curve point.

3.14. Matrix Spike (MS): A sample prepared by adding a known mass of target analyte to a specified amount of sample matrix for which an independent estimate of target analyte concentration is available. Matrix spikes are used to determine the effect of the sample matrix on the recovery efficiency of an analytical method.

3.15. Matrix Spike Duplicate (MSD): A replicate matrix spike prepared in the laboratory and analyzed to obtain a measure analytical precision.

3.16. Method Blank (MB): A sample of a matrix similar to the batch of associated samples (when available) that is free from the analytes of interest and interferences. It is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures.

3.17. Organic-free reagent water (OFW): Organic-free reagent water, all references to water in this method refer to ASTM Type 1 18 megaohm organic-free reagent water.

3.18. Method Detection Limit (MDL) spike: A matrix spike prepared at the reporting limit and used to calculate the MDL.

3.19. Reconstructed Ion Current (RIC): A plot of the total instrument response versus time
3.20. Relative Retention Time (RRT): The elution time of an analyte relative to the elution time of its associated internal standard
3.21. Instrument Blank (IB): Clean solvent containing internal standards at the appropriate level for the analysis is analyzed using the same conditions as a regular sample. An instrument blank is analyzed to detect and/or remove sample carryover from one analysis to another.
3.22. Surrogate (SURR): A substance with properties that mimic analytes of interest. It is unlikely to be found in environment samples and is added to them to monitor extraction efficiency.
3.23. Low level calibration verification (LCV): Lowest calibration standard used for an initial calibration.
3.24. Target software (TARGET): Chromatographic analysis software from Thermo Thru-Put version 4.14.

4. Interferences

4.1. Extraction Interferences: Raw GC/MS data from all blanks, samples, and spikes must be evaluated for interferences. Determine if the source of interference is in the preparation and/or cleanup of the samples and take corrective action to eliminate the problem. Most commonly this will involve contamination with the phthalate esters.
4.2. Method interferences are reduced by washing all glassware with hot soapy water and then rinsing with warm tap water, acetone, and methylene chloride followed by baking the glassware at 500 degrees centigrade overnight.
4.3. High purity reagents must be used to minimize interference problems.
4.4. Contamination by carryover can occur whenever high-concentration and low-concentration samples are sequentially analyzed. To reduce carryover, the sample syringe must be rinsed out between samples with solvent. Whenever an unusually concentrated sample is encountered, or the detector shows saturation due to analytes present in a sample, subsequent samples should be scrutinized for cross contamination.
4.5. Matrix interferences may be removed using sample clean-ups depending on the list of target analytes, these may include (but are not limited to) the use of solid phase extraction clean-up, silica gel, absorption chromatography or gel permeation chromatography. See the appropriate extractions SOPs for clean-up applicability to matrices or target analytes.
4.6. Deactivated glassware must be used when extracting samples for the lower level PAH analysis due the activity of these Targets at trace levels.

5. Safety

5.1. The toxicity and carcinogenicity of each reagent used in this method is not precisely defined. However, all compounds and solutions should be treated as health hazards, and exposure of these chemicals to skin and clothing should be minimized to the lowest possible level by whatever means available.

5.2. Contact with all chemicals should be minimized by the used of nitrile gloves, safety glasses, and laboratory coats.

5.3. All materials should be handled in the fume hoods to avoid exposure to fumes.

5.4. All GC split vents and vacuum exhaust are connected to an exhaust vent or charcoal filter.

5.5. Special care should be taken when derivitizing samples for PAH/PCP analysis. The Diazomethane gas produced by the reaction of Diazald, sodium hydroxide, and methanol is both toxic and explosive. The derivatization MUST take place within a fume hood, and the analyst should work with the sash down and full protective wear.

5.6. ARI maintains a current awareness file of Occupational Safety and Health Administration (OSHA) regulations regarding the safe handling of the chemicals specified in this method. A reference file of material safety data sheets (SDS) is available to all personnel involved in the chemical analysis. Consult with SDS sheets for all chemicals handled. SDS are available on-line at www.msdshazcon.com.

6. Equipment and Supplies

6.1. Gas chromatograph/mass spectrometer system

6.1.1. Gas chromatograph - An analytical system with a temperature-programmable gas chromatograph suitable for splitless injection and all required accessories, including syringes, analytical columns, autosampler, and gases. The capillary column should be directly coupled to the source of the mass spectrometer.

6.1.2. Fused-silica capillary column - 30 m x 0.25 mm ID (or 0.32 mm ID) 0.25 -0.5 µm film thickness. (Restek Rxi-17SIL MS or equivalent).

6.1.3. Mass spectrometer - Capable of scanning from 35 to 500 AMU every 1 second or less. The mass spectrometer must can produce a mass spectrum for Decafluorotriphenylphosphine (DFTPP) which meets all the criteria in Appendix 20.3 when 1-2 µL of the GC/MS tuning standard is injected through the GC (50 ng or less of DFTPP).

6.1.4. GC/MS interface - Any GC-to-MS interface may be used that gives acceptable calibration for each compound of interest and achieves acceptable tuning performance criteria. For a capillary column, the interface is usually capillary-direct into the mass spectrometer source.

6.2. Data system - A computer system must be interfaced to the mass spectrometer. The system must allow the continuous acquisition and storage on electronic media of all mass spectra obtained throughout the duration of the chromatographic program.

6.2.1. The computer must have software that can search any GC/MS data file for ions of a specific mass and that can plot such ion abundances versus time or scan number. This type of plot is defined as an Extracted Ion Current Profile (EICP). Software must also be available that allows integrating the abundances in any EICP between specified time or scan-number limits.

6.2.2. The data system should be equipped with the most recent version of the EPA/NIST Mass Spectral Library.

6.2.3. The data must be securely stored for at least seven years from date of acquisition in Target.

7. Reagents and Standards

7.1. Stock standard solutions (1000 - 10,000 µg/L) - Standard solutions can be prepared from neat standards or purchased as certified solutions. Certificates of analysis for all purchased neats and solutions are kept electronically in Element.

7.2. Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available. Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

7.2.1. All Components and reagents used for any standard preparation are entered in Element

7.2.2. The laboratory should have high purity acetone, hexane, methylene chloride, isooctane, carbon disulfide, toluene, methanol and other appropriate solvents for preparing standards.

7.2.3. Organic-free reagent water - All references to water in this method refer to ASTM Type 1 18 megaohm organic-free reagent water.

7.2.4. Neat standards are not assigned an expiration day and are considered never expired regardless of what is shown on the standard certificate.

7.2.5. Stock Standard Preparation

7.2.6. Prepare stock standard solutions by accurately weighing about 0.2500 g of pure material. Dissolve the material in pesticide quality methylene chloride or other suitable solvent and dilute to volume in a 25 mL volumetric flask. Larger or smaller volumes can be used at the convenience of the analyst. When compound purity is assayed to be 97% or greater, the weight may be used without correction to calculate the concentration of the stock standard.

7.2.7. Commercially prepared stock standards may be used at any concentration if they are certified by the manufacturer or by an independent source.

7.2.8. Transfer the stock standard solutions into amber bottles with Teflon lined screw-caps. Store at >0 to 6°C and protect from light.

7.2.9. Stock standard solutions should be checked frequently for signs of degradation or evaporation, especially just prior to preparing calibration standards from them.

7.2.10. Stock standard solutions must be replaced after 1 year or sooner if comparison with quality control check samples indicates a problem.

7.2.11. Stock standard solutions must be replaced 1 year after being de-ampullated.

7.2.12. A PDF record of analysis must be attached to the standard in Element and a notation entered in the comments indicating which instrument and the date the verification was performed.

7.3. Internal Standard Stock Solution - The internal standards employed are naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12 and perylene-d12. Other compounds may be used as internal standards if the method requirements are met. Dissolve 0.250 g of each compound with a small volume of methylene chloride or appropriate solvent. Transfer to a 250mL volumetric flask and dilute to volume with methylene chloride. Most of the compounds are also soluble in small volumes of methanol, acetone, or toluene, except for perylene-d12. The resulting solution will contain each standard at a concentration of 1,000µg/ml.

7.3.1. Each 0.1 mL aliquot of the sample extract undergoing analysis should be spiked with 2µL of the internal standard solution, resulting in a concentration of 2ng/µL of each internal standard (for example, when preparing a sample aliquot of 0.3ml, spike the extract with 6µl of the internal standard stock). Low PAH internal standard is at 0.2µg/mL final concentration

7.4. Surrogate Stock Standards - The surrogate standards employed are 2,4,6-tribromophenol, 2-Methylnaphthalene-d10, Fluoranthene-d10, and Dibenzo(a,h)anthracene-d14.

7.5. Prepare a stock solution containing all the PAH base surrogates 2-Methylnaphthalene-d10, Fluoranthene-d10, and Dibenzo(a,h)anthracene-d14 by dissolving 250mg of each into a 50 mL volumetric flask. Bring the solution up to volume with methylene chloride. The resulting solution will contain the surrogates at 5000µg/ml.

7.6. Prepare a stock solution containing 2,4,6-tribromophenol
by dissolving 250mg of each into a 50mL volumetric flask. Bring the solution up to volume with methylene chloride. The resulting solution will contain the surrogate at 5000µg/ml.

7.7. Working solutions- working standards are prepared from stock standards or purchased as commercially certified mixtures.

7.7.1. Working standards expire on the date of expiration of the stock solutions they are made from, on the manufacturer's certified expiration date or within one year from date of preparation, whichever comes first. They must be replaced now.

7.7.2. Working standard solutions must be replaced 1 year after being de-ampullated.

7.7.3. Working standards must be stored at >0 to 6°C and protected from light.

7.7.4. Working standards should be checked frequently for signs of concentration or degradation.

7.7.5. A PDF record of analysis must be attached to the standard (non-virtual only) in Element and a notation entered in the comments indicating which instrument and the date the verification was performed.

7.8. Surrogate working standards

7.8.1. Surrogate calibration standard- the surrogate calibration standard is prepared by diluting the surrogate stock in methylene chloride such that the concentration of each analyte is 50µg/ml (5µg/mL for low PAH) This solution is used to calibrate the instrument to quantitate surrogate concentrations.

7.8.2. Surrogate spiking standard- the surrogate spiking standard is prepared by diluting the surrogate stock such the concentrations of the surrogates are 15-75µg/mL (1.5-7.5 for low PAH) prepared in acetone. This solution is used to spike all extracted samples and QC samples with surrogates.

7.9. Matrix spike working standards- the matrix spiking standards are used to prepare MS/MSD sets as well as BS/BSDs.

7.9.1. The matrix spiking solution is purchased commercially and contains all the analytes in acetone. The concentration of each analyte is 15µg/mL (1.5µg/ml for low PAH)

7.9.2. If alternative matrix spiking solutions are required (for example, a matrix spike containing an extra analyte not contained in the full spike) an appropriate concentration should be determined, and the solution prepared in a water-soluble solvent (usually methanol or acetone) at that concentration.

7.9.3. Calibration working standards- the standards used to prepare calibration curves are usually purchased as commercially certified mixtures. Working calibration solutions are prepared by diluting these standards in methylene chloride such that the concentration of each analyte is 50

7.9.4. Calibration working standards for PCP/PAH analysis are prepared in Hexane saturated with Diazomethane gas to derivatize the PCP to a methyl ester.

7.9.5. GC/MS working tuning standard- a tuning standard should be prepared containing 500µg/mL each of DFTPP (Decafluorotriphenylphosphine); p,p'-DDT, Pentachlorophenol, and Benzidine. This should be used to prepare the 25µg/mL or less standard used to tune the instrument in cases where the mid-level calibration standard is acquired in selected ion mode.

7.9.6. Derivatization apparatus and reagents for Diazomethane gas (PCP analyses only)

7.9.6.1. A 60 mL VOA vial, with cap and Teflon lined septum.

7.9.6.2. A Teflon tube pushed through the septum of the 60ml vial

7.9.6.3. Diazald

7.9.6.4. 3M NaOH in Methanol

8. Sample Collection, Preservation, Shipment, Storage, Holding Times and Disposal.

8.1. Samples must be collected in an appropriate container, transported to ARI and stored under custody at >0 to 6 ºC.

8.2. Samples must be stored at ARI, at >0 to 6 ºC until final disposal.

8.3. Samples must be extracted within holding times determined from the day of sampling. The standard holding time for water samples is seven days. The standard holding time for solid samples is 14 days.

8.4. Solid and sediment samples may be stored at -10 to -20 ºC to extend the holding time to one year.

8.5. Extracts are delivered to Refrigerator 15 in the instrument laboratory by extractions technicians.

8.5.1. Analysts in the instrument lab assume custody of the sample extracts and then move them into Refrigerator 18 in a bin assigned in Element

8.5.2. Extracts must be stored at >0 to 6 °C and protected from light.

8.5.3. Extracts must be analyzed within 40 days of extraction.

8.5.4. Extracts must be stored in their assigned Element bin.

8.5.5. Extracts may be deposed 40 days after the analysis has been completed and the Element bin will be recycled for future use.

8.5.6. Extract will be disposed in the large blue barrel in the satellite accumulation area designated for extract vials. Disposed extracts are now marked in Element as disposed.

9. Quality Control

9.1. Quality control requirements related to tuning, initial and continuing calibration are detailed in Section 10 of this document.

9.2. Surrogates

9.2.1. Surrogate standards are added to every sample and associated QA (MB, BS, MS etc.) prior to extraction to monitor extraction efficiency.

9.3. Method Blanks and Instrument Blanks

9.3.1. A method blank is a volume of a clean reference matrix (OFW or sodium sulfate for soil/sediment samples) that is carried through the entire analytical procedure. The volume or weight of the reference matrix must be approximately equal to the volume or weight of samples associated with the blank. The purpose of a method blank is to determine the levels of contamination associated with the processing and analysis of samples.

9.3.2. Method blank extraction and analysis are performed as follows:

9.3.2.1. MBs must be processed with every batch of 20 or fewer samples of similar matrix

9.3.2.2. Method blanks should be analyzed on each GC/MS system used to analyze associated samples. When a method blank shows contamination the blank should be re-vialed and reanalyzed to confirm the contamination.

9.3.2.3. A method blank for water samples consists of 0.5-1L volume of reagent water. For medium and low-level soil/sediment samples, a method blank consists of 1g to 10g of sodium sulfate. Extract, concentrate, cleanup and analyze the method blank according to procedures used for water; tissue; or solid (soil or sediment) samples.

9.3.2.4. An instrument blank consisting of internal standard and clean solvent is analyzed prior to sample analysis after the ICV when a method blank is not analyzed.

9.4. Blank Spikes (BS)

9.4.1. To evaluate the accuracy of the analytical method independent of matrix-related effects, a matrix-specific blank spike (BS) must be included in each preparation batch. The BS must contain all surrogates and target analytes required by the method.

9.4.2. In instances where insufficient sample volumes exist to perform an MS/MSD analysis, an BS/BSD may be performed upon client request to assess the precision of the analytical method. A BSD, when required, is prepared and analyzed identically to the BS.

9.4.2.1. The recovery of each blank spike target must be evaluated and reported

9.4.2.2. The RPDs between the BS/BSD samples must be measured and reported.

9.4.2.3. Evaluate the BS/BSD RPD and note any deviation >30% in the reviewer checklist.

9.5. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

9.5.1. To evaluate the effects of the sample matrix on the methods used for ABN analyses, a mixture of all target compounds is spiked into two aliquots of a sample and analyzed using the same method as all other samples.

9.5.2. A matrix spike and matrix spike duplicate should be extracted and analyzed for every 20 field samples of a similar matrix or whenever samples are extracted by the same procedure.

9.5.2.1. The recovery of each matrix spike must be evaluated and reported.

9.5.2.2. The RPDs between the MS/MSD samples must be measured and reported.

9.5.2.3. Evaluate the MS/MSD RPD and note any deviation >30% in the reviewer checklist.

9.5.3. As part of a client's QA/QC program, water rinsate samples and/or field/trip blanks (field QC) may accompany soil/sediment samples and/or water samples that are delivered to the laboratory for analysis. The laboratory will not perform MS/MSD analysis on any of the field QC samples.

9.5.4. If a client designates a sample to be used as an MS/MSD, then that sample must be used. If there is insufficient sample remaining to perform an MS/MSD, then the laboratory shall choose

another sample on which to perform an MS/MSD analysis. At the time the selection is made, the laboratory shall notify the client that insufficient sample was received and identify the sample selected for the MS/MSD analysis. The rationale for the choice of another sample other than the one designated by the client shall be documented in the narrative.

9.5.5. If there is insufficient sample to perform a requested MS/MSD, the laboratory should contact the client to inform them of the situation. The client will either approve that no MS/MSD is required, require that a reduced sample aliquot be used for the MS/MSD analysis or request that a BS/BSD (See Section 9.4.2) analysis be performed. The laboratory shall document the client's decision in the narrative.

9.5.6. Dilution of MS/MSD extracts to get either spiked compounds or native analytes on scale is not necessary.

9.5.7. Duplicate Analysis

9.5.8. When mandated by project-specific requirements, a duplicate analysis of a given sample may be performed as an independent assessment of method precision. A duplicate consists of an independently prepared second aliquot of a given sample carried through the entire analytical process.

9.5.9. The RPDs between the Sample and Sample duplicate must be measured and reported.

9.5.10. Evaluate the Sample and Sample duplicate RPD and note any deviation >30% in the reviewer checklist.

9.5.11. When mandated by project-specific requirements, an SRM (Standard Reference Material) sample will be analyzed as an independent assessment of method performance.

9.5.12. The recovery of each target in the SRM must be compared to the true value provided by the SRM provider to be evaluated and reported. Any targets not meeting the recovery limits will require corrective action.

9.6. Internal Standard Response (EICP) area and retention time data must be evaluated during and/or immediately after the analysis. The response for the ICV internal standards must be within the inclusive range of -50.0 to +100.0 percent of the response of the internal standards in the most recent mid-point of the initial calibration analysis. The response for each sample, associated batch QC, and the CCV internal standards must be within the inclusive range of -50.0 to +100.0 percent of the response of the internal standards in the most recent ICV. The retention time shift for each of the internal standards must be within ± 0.50 minutes (30 seconds) between the ICV and the last CCV run or from the middle point of the initial calibration. The retention time shift for each of the internal standards must be within ±0.166 minutes (10 seconds) between samples/associated batch QC and the ICV.

9.7. Statistical Control- Internal quality control limits for analyte spike and surrogate recoveries and relative percent difference for BS/BSD are statistically generated on a periodic basis. These quality control limits are provided to bench chemists, managers, and QA staff as tools for assessing data quality in real-time at the point of data generation. Practical considerations relating to their dynamic nature require their presentation in a document separate from this SOP. All analysts using this SOP must use it in conjunction with Control Limit documentation to assess data quality and any possible need for corrective actions. Current control limits may be found in the Element.

9.8. Initial Demonstration of Proficiency- Each analyst must demonstrate initial proficiency with each sample preparation and determinative method combination performed, by generating data of acceptable accuracy and precision for target analytes in a clean matrix. The laboratory must also repeat these procedures whenever new staff is trained or significant changes in instrumentation or procedure are made. See EPA Methods 8000 and 3500 for information on how to accomplish this demonstration.

10. Calibration and Standardization

10.1. Calibration standards

10.1.1. A minimum of six calibration standards should be prepared.

10.1.2. One of the calibration standards must be at the reporting limit, while the others should correspond to the range of concentrations found in real samples but should not exceed the working range of the GC/MS system. The lowest calibration point of each individual target analyte becomes the reporting limit for that target. All target analytes quantitated below the lowest calibration point for any target analyte must be qualified with a “J” flag to show the quantitation is below the working range of the curve and therefore is an estimate.

10.1.3. Calibration standards are prepared from the working calibration solutions at concentrations of 0.1, 0.5, 1.0, 2.5, 5.0 and 10µg/ml.

10.1.4. Low PAH calibration standards are prepared from the working calibration solutions at concentrations of 0.01, 0.05, 0.1, 0.25, 0.5 and 1.0µg/ml.

10.1.5. PAH/PCP standard Concentrations standards are prepared from the working calibration solutions at concentrations of 0.1, 0.5, 1.0, 2.5, 5.0 and 10µg/mL with PCP and Tribromophenol at 0.5, 2.5, 5.0, 12.5, 25.0 and 50µg/ml.

10.1.6. The calibration curve standards are made as needed and the internal standard solution is added prior to analysis.

10.1.7. Each standard must contain all analytes requested for a specific project, and no target analyte may be quantitated without first being calibrated.

10.1.8. All standards should be stored at >0 to 6°C and should be freshly prepared once a year, or sooner if check standards indicate a problem. The ICV/CCV standard should be prepared weekly with the preparatory date on the label and stored at >0 to 6°C. If the analyst suspects degradation the standard should be replaced.

10.1.9. The calibration standards are analyzed, and a minimum of six curve points are used to calibrate each analyte as follows:

Compounds that are routinely calibrated at 10, 5, 2.5, 1.0, 0.5, and 0.1µg/ml		
Naphthalene	Benzo(b)thiophene	2-methylnaphthalene
1-methylnaphthalene	2-Chloronaphthalene	Biphenyl
2,6-Dimethylnaphthalene	Acenaphthylene	Acenaphthene
Dibenzofuran	2,3,5-Trimethylnaphthalene	Fluorene
Dibenzothiophene	Phenanthrene	Anthracene
Carbazole	1-methylphenanthrene	Fluoranthene
Pyrene	Benzo(a)anthracene	Chrysene
Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(j)fluoranthene
Benzo(e)pyrene	Benzo(a)pyrene	Perylene
Dibenzo(a,h)anthracene	Indeno(1,2,3-cd) pyrene	Benzo(g,h,i)perylene
2-methylnaphthalene-d10 (SS)	Fluorene-d10 (SS)	Dibenzo(a,h)anthracene-d14 (SS)

Compounds that are routinely calibrated (Low PAH) at 1.0, 0.5, 0.25, 0.10, .05, and .01µg/ml		
Naphthalene	Benzo(b)thiophene	2-methylnaphthalene
1-methylnaphthalene	2-Chloronaphthalene	Biphenyl
2,6-Dimethylnaphthalene	Acenaphthylene	Acenaphthene
Dibenzofuran	2,3,5-Trimethylnaphthalene	Fluorene
Dibenzothiophene	Phenanthrene	Anthracene
Carbazole	1-methylphenanthrene	Fluoranthene
Pyrene	Benzo(a)anthracene	Chrysene
Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(j)fluoranthene
Benzo(e)pyrene	Benzo(a)pyrene	Perylene
Dibenzo(a,h)anthracene	Indeno(1,2,3-cd) pyrene	Benzo(g,h,i)perylene
2-methylnaphthalene-d10 (SS)	Fluorene-d10 (SS)	Dibenzo(a,h)anthracene-D14 (SS)

Compounds that are routinely calibrated (PCP/PAH) at 50, 25, 12.5, 5.0, 2.5, and 0.5µg/ml

Pentachlorophenol	Tribromophenol (SS)	

10.2. MS tuning- prior to initial calibration, each GC/MS system must be hardware-tuned to meet the criteria in Appendix 20.3 for a 50ng total or less injection of DFTPP. Analyses must not begin until all these criteria are met. Evaluate the ion abundance by using any of the following three scenarios: Use a single spectrum at the apex of the DFTPP peak, use the mean of the apex and the preceding and following scans (the mean of a symmetric pattern of scans about the apex), or use the average across the entire peak. The tune must satisfy the ion abundance acceptance criteria listed in Appendix 20.3. Background subtraction is required and must be accomplished using a single scan acquired within 20 scans of the elution of DFTPP. Do not subtract part of the DFTPP peak.

10.2.1. The GC/MS tuning standard is also used to assess GC column performance and injection port inertness. Degradation of DDT to DDE and DDD must not exceed 20%. DDT percent breakdown is calculated by dividing the sum of the DDD and DDE areas by the sum of the areas of DDT, DDE and DDD and then multiplying this result by 100. Benzidine and pentachlorophenol should be present at their normal responses, and no peak tailing should be visible. Peak tailing factors will be calculated using the procedure detailed in Appendix 20.6 using a Target macro to calculate the tailing factor.

10.2.2. Tailing factors must be <2.0 for benzidine and pentachlorophenol. See Section 16.3 for procedures on how to bring the instrument into compliance for tuning, DDT breakdown, or peak tailing factors.

10.2.3. The tune standard is run in the full scan mode separate from the calibration standards and must meet all ion abundance criteria shown in Appendix 20.3 before the initial calibration may continue.

10.2.4. All analyses performed in the sequence following the tune standard must use the same instrument parameters (GC program, MS parameters, etc.)

10.3. Calculate Relative Response Factors (RFs)

10.3.1. Evaluation of the initial calibration begins by calculating response factors (RRFs) for each analyte in each calibration standard. The formula for calculating each response factor involves the areas of the quantitation ion of the analyte and its associated internal standard as well as the concentration of the analyte and internal standard in the calibration standard according to the formula:

RRF = (As * Cis)/(Ais * Cis)
Where
As = The peak area of the analyte or surrogate

Cis = The concentration of the internal standard in µg/L
Ais = The peak area of the internal standard
Cs = The concentration of the analyte or surrogate in µg/L

10.3.2. The RRF for each analyte should meet the advisory RRF listed for the analyte in Appendix 20.2 for each of the calibration levels. Special care should be taken to monitoring the RRF in the lowest calibration standard to ensure adequate sensitivity at the reporting limit. The minimum RRF for any target for all calibration levels is 0.01

10.3.3. Analytes which fail the minimum RRF guidance listed in Section 10.3.2 should be noted in the reviewer checklist.

10.4. Analyte Linearity.

10.4.1. After measuring the relative response factors for each analyte in each of the calibration standards, the linearity of the analyte must be measured.

10.4.2. The average RRF should be calculated for each compound using the formula

$RRFav = \frac{\sum RRFi}{n}$
Where
RRFi = the RRF of the analyte in each calibration level
n = the number of calibration levels (usually six or five)

10.4.3. The percent relative standard deviation (% RSD) should also be calculated for each compound using the formula

$RSD = \frac{100 * SD}{RFav}$	$= 100 * ((\sum(RRFi - RRFav)^{2)}/(n-1))^{1/2}/RRFav$
Where	
RRFi = the RRF of the analyte in each calibration level	
RRFav = the average RRF of the analyte over the entire calibration range	
n = the number of calibration levels (usually six or five)	

10.4.4. The % RSD should be less than 15% for each compound, in which case the average response factor will be used for quantitation as it is considered constant over the calibration range. Target analytes that exceed 15% RSD will attempt to utilize an alternative calibration option.

10.4.4.1. Before attempting an alternative calibration model, the analyst should ensure that the RSD failure is not due to detector or chromatographic system saturation and that the chromatographic system is functioning properly. Should saturation or chromatographic activity

be evident, the analyst should correct the problem and reanalyze the affected calibration standards.

10.4.4.2. A linear fit calibration that does not include the origin and generates a coefficient of determination (R^2) that is greater than or equal to 0.99 is acceptable. ARI will primarily attempt to force calibration curve through zero. Forcing the curve through zero is not the same as including the origin as a point in the calibration. When the curve is forced through zero, the intercept is set to 0 before the regression is calculated, thereby setting the bias to favor the low end of the calibration range by "pivoting" the function around the origin to find the best fit and resulting in one less degree of freedom.

10.4.4.3. Next the analyst may attempt a quadratic non-linear calibration which may be used with target analytes that have six or more calibration points only. An additional initial calibration point may be considered for target analytes that require non-linear calibration if only five calibration points are available.

10.4.4.4. An analyte is determined to meet the calibration criteria found in Section 10.4.4, even if its RSD exceeds 15% if the analyte has an acceptable linear or quadratic fit curve with a coefficient of determination (R^2) greater than 0.99.

10.4.4.5. See EPA Method 8000C Section 11 for reference to linear fit and non-linear (quadratic) calibration.

10.4.5. Targets requiring either a linear or quadratic fit will be documented in the reviewer checklist.

10.4.6. Individual targets that are unable to meet the above requirements in Section 10.4.4.4 must be documented in the reviewer checklist

10.4.7. Special care should be taken to monitor the RRF in the lowest calibration standard to ensure adequate sensitivity at the method reporting limit. In addition, the lowest calibration point should be recalculated (not reanalyzed) using the final calibration curve in which the standard is used. The recalculated concentration, especially where linear and quadratic fits are used, should be within ±50% of the standard's true concentration. The recalculated concentration of the standards above the low point should be ±30%. If a failure occurs in the lowest calibration point and it is equivalent to the method reporting limit (MRL), the analyte should be reported as estimated near that concentration or the MRL should be reestablished at a higher concentration. Following examination of the ICAL and any corrective action, all compounds not meeting the calibration acceptance criteria must be documented on the reviewer's checklist.

10.5. Calibration Acceptance

10.5.1. A calibration for an analyte is deemed valid when it meets the RSD criteria found in 10.4.4 and 10.4.4.4

10.5.2. Due to the large number of analytes that may be assayed using this SOP, some analytes may fail to meet the calibration acceptance criteria. The method allows some flexibility in dealing with such cases.

10.5.2.1. A calibration curve may be considered valid even with some analytes failing the criteria so long as the number of analytes failing the acceptance criteria found in Section 10.5.1 is equal to or less than 10% of the total number of analytes calibrated including surrogates (e.g. a calibration with sixty analytes may have up to six analytes exceed the acceptance criteria.)

10.5.2.2. Quantitated values for analytes which fail calibration acceptance criteria must be flagged with a “Q” qualifier for all detected analytes and noted on the Reviewer checklist.

10.6. Evaluation of retention times - The relative retention time (RRT) of each target analyte in the calibration standard should agree within 0.05 RRT units. Late-eluting target analytes usually have much better agreement. The RRT is calculated by dividing the retention time of the target analyte/surrogate by the retention time of its assigned internal standard.

10.6.1. The internal standards selected should permit most of the components of interest in a chromatogram to have retention times of 0.80-1.20 relative to one of the internal standards.

10.7. Calibration curve verification - Prior to use for sample analysis, the acceptability of a calibration curve must be verified through analysis of a second source calibration verification (SCV) obtained from a second source. The SCV must be derived from a different manufacturer than the stock standard used to prepare the calibration curve when available. The SCV should show 70 - 130% (80 – 120% for DOD-QSM analyses) recovery for all compounds when compared to the initial calibration curve. Due to the large number of analytes that may be assayed using this SOP, some analytes may fail to meet the calibration acceptance criteria. Up to 10% of analytes may exceed the SCV criteria if they show a recovery within 50-150% of the true value for in-house analyses. No exceptions for DOD-QSM are allowed.

10.8. The reference mass spectrum used to verify the identity of analytes should be updated from the mid-point of the initial calibration.

10.9. Daily GC/MS calibration verification - Performed at the beginning of each 12-hour analytical shift.

10.9.1. The GC/MS tuning standard is not required for GC/MS calibration verification.

10.9.2. Analysis of an initial calibration verification (ICV) at mid-concentration (2.5 or 0.25µg/mL), containing each compound of interest, including all required surrogates, must be performed daily before analysis. Next, a continuing calibration verification (CCV) must be run after every 12 hours of analysis time and at the end of the analytical sequence, using the introduction technique used for the initial calibration. The results from the ICV analysis must meet the acceptance criteria detailed below. See section 10.9.2.7 and 10.9.2.8 for CCV acceptance criteria.

10.9.2.1. Calculate Relative Response Factors- A system performance check must be made at the start of every 12-hour shift. This is the same check that is applied during the initial calibration. Calculate the RRF for each analyte. Each compound should meet the advisory minimum relative response factor found in Appendix 20.2 If the minimum relative response factors are not met, the system should be evaluated, and corrective action may be taken before sample analysis begins. Some possible problems are standard mixture degradation, injection port inlet contamination, contamination at the front end of the guard column/analytical column, and active sites in the column or chromatographic system. This check must be met before analysis begins. See Section 16.5 for procedures for dealing with RRF failures.

10.9.2.2. Analyte linearity- The response factors calculated in Section 10.9.2.1 are used to measure the validity of the initial calibration by using them to calculate the percent difference (for average RRF calibrations) or percent drift (for linear fit or quadratic fit calibrations.)

10.9.2.2.1. Calculate the percent difference using:

$\%\ \text{Difference} = \frac{RRF_i - RRF_c}{RRF_i} * (100)$
Where:
RRFi = Average relative response factor from initial calibration.
RRFc = Relative response factor from current verification check standard.

10.9.2.3. If the percent difference for each analyte is less than or equal to 20% the initial calibration verification (ICV) is valid. Problems like those listed under the minimum response factors could affect this criterion. See Section 16.6 for procedures for dealing with %D failure.

10.9.2.4. The responses and retention times in the calibration check standard must be evaluated immediately after data acquisition. Chromatography system maintenance (shortening the column, etc.) may change retention times. Corrective action is required when:

10.9.2.5. Relative retention times change.

10.9.2.6. The response (EICP) of any internal standard (IS) is in the acceptable range of -50% to +200% using the IS in the mid-point standard level (25ng/ul) from the most recent initial calibration as the reference.

10.9.2.7. Much in the manner that a certain number of analytes may fail the initial calibration criteria, the method allows a certain number of analytes to fail the criteria set above for initial calibration verification. In the case of the initial calibration verification (ICV), many analytes less than or equal to 20% of the total number of calibrated analytes (including surrogates) may exceed the criteria set in Sections 10.9.2.1 and 10.9.2.2.

10.9.2.8. Reported values for the analytes failing the acceptance criteria must be flagged with a "Q" qualifier and noted in the Reviewer checklist.

10.9.2.9. A continuing calibration verification may be used as an initial calibration verification to extend the analytical sequence if the CCV meets all requirements as required for the ICV

10.9.2.10. (CCV criteria) If the percent difference for each analyte is less than or equal to 50% the continuing calibration verification (CCV) is valid. Problems like those listed under the minimum response factors could affect this criterion. See Section 16.6 for procedures for dealing with %D failure.

10.9.2.11. (CCV criteria) The response (EICP) of any internal standard (IS) is in the acceptable range of -50% to +200% using the IS reference from the ICV.

10.10. Additional guidance for selected ion monitoring (SIM) analysis.

10.10.1. The exact mass acquired (i.e. mass 188.1 not 188) should include the mass defect.

10.10.2. The dwell time must be adjusted for each ion descriptor such that a minimum of five scans per chromatographic peak are acquired.

10.10.3. Two ions should be monitored for each target and their spectra should be updated from the calibration mid-point

11. Procedure

11.1. Prior to using this method, the samples must be extracted using the appropriate sample preparation and cleanup methods.

Matrix	Methods
Air	3542
Water	3510, 3520, 3535
Soil/sediment	3540, 3541, 3545, 3550, 3560, 3561, 3565
Waste	3540, 3541, 3545, 3550, 3560, 3561, 3580

11.2. Extract cleanup - Extracts may be cleaned up by any of the following methods prior to GC/MS analysis.

Compounds	Methods
Polynuclear aromatic hydrocarbons	3630, 3660, 3640

11.3. Derivatization- When Pentachlorophenol (PCP) is a requested analyte, the extracts must be derivatized with diazomethane prior to GC/MS analysis. All derivatization MUST take place within the fume hood.

11.3.1. Add one pipette of Hexane saturated with Diazomethane gas to the extract reduced to a volume of 2-3ml. The solution should turn light yellow indicating the diazomethane is saturated in the solution. This procedure is done in the extraction lab prior to final blowdown.

11.3.2. Do not perform any cleanups on the extracts for the PCP/PAH analysis.

11.4. The recommended GC/MS operating conditions are as follows (samples must be run using the same instrument conditions as the initial calibration).

Quantitation Mass range:	Discrete ion
Tuning Mass Range	35-500 amu
Scan time:	1 sec/scan
Initial temperature:	60°C, hold for 2 minutes
Temperature program:	60-130°C at 30C°/min 130-330°C at 20C°/min
Final temperature:	330°C, hold for 5 minutes
Injector temperature:	270°C
Transfer line temperature:	300°C
Source temperature:	According to manufacturer's specifications (230°C for Agilient 5973 MSD)
Injector:	Grob-type, splitless/split
Sample volume:	1-2 µL
Carrier gas:	Helium at 30 cm/sec.

11.5. Prior to sample analysis the GC/MS system must be tuned as described in Section 10.2 and must have an acceptable initial calibration curve (the requirements for the calibration curve are found in Section 10.3 and 10.4.

11.6. Prior to sample analysis an initial calibration verification (ICV) standard must be analyzed, and this ICV must meet the criteria found in Section 10.9. If time remains in the 12-hour QC period begun with the initial calibration, the midpoint calibration standard from the initial calibration may be used as the CCV provided it meets the requirements found in Section 10.9.

11.7. Next, a method blank or an instrument blank must be analyzed after the ICV and prior to sample analysis to ensure the system is free of contaminants. If the method blank shows contamination, then it may be appropriate to analyze an instrument blank to demonstrate the source of contamination is not the result of carryover from standards or samples.

11.8. GC/MS analysis

11.8.1. It is highly recommended that the extract be screened on a GC/FID using the same type of capillary column. This will minimize contamination of the GC/MS system from unexpectedly high

concentrations of organic compounds and may show high background samples that should be analyzed using a medium/high level extraction.

11.8.2. Spike a 0.3ml aliquot of the 0.5-1ml extract obtained from sample preparation with 6µL of the internal standard solution just prior to analysis. This is the equivalent internal standard concentration of 2µg/mL (low 0.2µg/mL) of each standard in the sample. This aliquot should be prepared in an amber glass autosampler vial and sealed with a PFTE crimp cap.

11.8.3. Analyze the 0.3 ml aliquot by GC/MS. The injection volume must be the same volume used for the calibration standards. The recommended GC/MS operating conditions to be used are specified in Section 11.4.

11.8.4. If the response for any target analyte exceeds 10/50µg/mL (high point of the initial calibration curve for PAHs or PCP respectively), the extract must be diluted and re-analyzed. See Section 16.12 for guidance on dilutions. In the case of low sim PAH if the response for any target analyte exceeds 1µg/mL, then extract dilution must take place. See section 16.12 for guidance on dilutions.

11.8.5. Perform all qualitative and quantitative measurements as described in Section 11. Store the extracts at >0 to 6°C, protected from light in screw-cap vials equipped with un-pierced PFTE lined septa.

12. Data Analysis and Calculations

12.1. An analyte is identified by comparison of the sample mass spectrum with characteristic ions in a reference mass spectrum. The reference mass spectrum must be generated by the laboratory using the conditions of this SOP. These standard reference spectra may be obtained through analysis of the calibration standards and should be updated with every initial calibration. The characteristic ions are defined as the three ions of greatest intensity, or any ions over 30% intensity relative to the base ion, if less than three such ions occur in the reference spectrum. Two criteria must be satisfied to verify identification: (1) elution of sample component at or near the same GC relative retention time (RRT) as the standard component; and (2) correspondence of the sample component mass spectrum/ion abundances and the standard component mass spectrum/ion abundances.

12.2. The intensities of the characteristic ions must maximize in the same scan or within one scan of each other. Selection of a peak by a data system target compound search routine where the search is based on the presence of a target chromatographic peak containing ions specific for the target compound at a compound-specific retention time will be accepted as meeting this criterion.

12.3. The sample component RRT must compare within 0.05 RRT units of the RRT of the standard component. For reference, the standard must be run within the same 12-hour QC period as the sample. If co-elution of interfering components prohibits accurate assignment of the sample component RRT

from the total ion chromatogram, the RRT should be assigned by using extracted ion-current profiles for ions unique to the component of interest.

12.4. All ions present in the standard mass spectra at a relative intensity greater than 10% (the most abundant ion in the spectrum is equal to 100% intensity) should be present in the sample spectrum. Ions present in the reference spectrum but not in the sample spectrum should be reviewed for possible subtraction from the sample spectrum because of background contamination or co-eluting peaks. Spectral enhancement can sometimes create these discrepancies.

12.4.1. The relative intensities of ions specified in Section 12.1 must agree within plus or minus 30% between the standard and sample spectra. (Example: For an ion with an abundance of 50% in the standard spectrum, the corresponding sample abundance must be between 20 and 80 percent.) If not, the compound may be flagged with an "M" if the analyst determines that the identification is valid (favors false positive).

12.4.2. Structural isomers that produce very similar mass spectra should be identified as individual isomers if they have sufficiently different GC retention times. Sufficient GC resolution is achieved if the height of the valley between two isomer peaks is less than 25% of the sum of the two peak heights. Otherwise, structural isomers are identified as isomeric pairs and reported as the average of both compounds by the analyst.

12.4.3. Identification is hampered when sample components are not resolved chromatographically and produce mass spectra containing ions contributed by more than one analyte. When gas chromatographic peaks obviously represent more than one sample component (i.e., a broadened peak with shoulder(s) or a valley between two or more maxima), appropriate selection of analyte spectra and background spectra is important. Examination of extracted ion current profiles of appropriate ions can aid in the selection of spectra, and in qualitative identification of compounds. When analytes co-elute (i.e., only one chromatographic peak is apparent), the identification criteria can be met, but each analyte spectrum will contain extraneous ions contributed by the co-eluting compound.

12.5. Quantitative analysis

12.5.1. When a compound has been identified, the quantitation of that compound will be based on the integrated abundance from the EICP of the primary characteristic ion. Quantitation will take place using the internal standard technique. The internal standard used shall be the one nearest the retention time of a given analyte. If secondary ion quantitation is necessary due to interference, then a short quantitation report list is generated. This quantitation contains the integrated areas of the affected compounds, based on the secondary ion(s) for that compound, and of the relevant internal standards. Identical reports must be generated for the sample with

interference and for the relevant initial calibration. The report for the initial calibration is used to generate a relative response factor for the affected compound based on its secondary ion. This relative response factor is then used in the calculations for that compound in the affected sample. Note that the source of the relative response factor for the aforementioned situation differs from the quantitation using the primary characteristic ion (when free of interference). All quantitation using the primary characteristic ion use the average relative response factor from the initial calibration. The short quantitation report may be hand calculated by the analyst if it is signed and dated by the analyst. The report must be included with the data file PDF in Element.

12.5.2. Calculate the concentration of each identified analyte in the sample as follows:

Concentration (µg/L) = $\frac{(Ax)(Is)(Vt)}{(Ais)(RRF)(Vo)(Vi)}$
where:
A_X = Area of characteristic ion for compound being measured
Is = Amount of internal standard injected (ng).
Vt = Volume of total extract
A_{IS} = Area of characteristic ion for the internal standard
RRF = Relative response factor for compound being measured
Vo = Volume of water extracted (ml)
Vi = Volume of extract injected (µL)

12.5.3. Sediment/Soil/Sludge (on a dry weight basis) and Waste (normally on a wet weight basis)

Concentration (µg/kg) =	$\frac{(Ax)(Is)(Vt)}{(Ais)(RRF)(Vi)(Ws)(D)}$
where:	
A_X = Area of characteristic ion for compound being measured	
Is = Amount of internal standard injected (ng).	
Vt = Volume of total extract	
A_{IS} = Area of characteristic ion for the internal standard	
RRF = Relative response factor for compound being measured	
Vi = Volume of extract injected (µL)	
Ws = Weight of sample extracted or diluted in grams	
D = % Dry weight of sample = 1.0 on an as received basis	

13. Method Performance

13.1. The QA department measures method performance using a combination of continuing MDL studies, quarterly LOD verifications, performance evaluation samples, standard reference materials, and the monitoring of surrogate and spike recoveries.

13.1.1. Detection limits- the LOD for all analytes quantitated using this SOP are set using the MDL studies. The detection limit indicates the lowest result that can reliably be distinguished in a matrix from a blank.

13.1.2. LOD verifications are performed each quarter for each analyte by each preparatory and analytical method.

13.1.3. MDL, LOD and MRL values may be found for each analyte in Element

13.2. Laboratory precision and bias measurements are performed by monitoring surrogate and spike recoveries in samples and quality control samples.

13.2.1. Control limits are calculated from these recoveries.

13.2.2. These control limits are disseminated to the bench chemists and ELEMENT administrator for use in monitoring method performance in real time.

13.2.3. As these limits are updated regularly, their dynamic nature prevents their inclusion in this SOP. However, they may be found in Element

13.3. Method performance must be re-evaluated every time there is a change in instrument type, personnel or method. Method performance will be demonstrated using the Demonstration of Capability (DOC) procedure described in Section 12.3 and Appendix 2.2 of ARI SOP 1017S. A certification statement and all raw data from the DOC will be forwarded to QA for approval and archive. Each DOC is kept on record in SharePoint

13.4. This method should be performed only by experienced GC analysts, or under the close supervision of such analysts.

13.5. The experience of the analyst must weigh heavily in the interpretation of the chromatogram.

14. Pollution Prevention

14.1. All syringe rinsing must be performed over charcoal to minimize the exposure of the environment to solvent or extract.

14.2. Charcoal containers must be covered when not in use to prevent fugitive vapors from escaping.

14.3. All GC split vents will be connected to an exhaust vent or charcoal filter.

14.4. All MS vacuum pumps will have a charcoal exhaust filter.

14.5. All spent vials are placed into the blue waste drum for proper disposal after analysis is finished.

14.6. Open solvent containers should only be present when actively preparing samples.

14.7. Wherever possible the final sample extract volume should be as small as possible to minimize the generation of waste.

15. Data Assessment and Acceptance Criteria for QC Measure

15.1. Requirements relating to initial and continuing calibration are detailed in Section 10 of this document.

15.2. Method Blanks and Instrument Blanks- The method blank must contain less than 1/2 the reporting limit (MRL)of the targeted analytes or corrective action is required.

15.3. Internal Standards- All samples and associated QC internal standard EICP areas following the ICV must meet the technical acceptance criteria listed in Section 9.6.

15.4. Surrogate Recoveries

15.4.1. All method blanks, blank spikes, matrix spikes, matrix spike duplicates, duplicates, SRMs or other samples must have acceptable surrogate recoveries. See Element for the most recent control limits.

15.4.2. Recoveries outside of the in-house QC limits should not necessarily be used to reject batch data, but will require corrective action.

15.4.3. Any surrogate recovery less than 10% will require corrective action.

15.4.4. These requirements do not apply to subsequent dilutions of samples where a prior analysis of the diluted sample extract shows acceptable surrogate recovery.

15.4.5. Certain methods or clients may specify project specific surrogate recovery acceptance windows.

15.4.6. When mandated by contract-specific requirements, corrective actions must be performed in response to failure to meet project specific surrogate acceptance criteria, even when the criteria are labeled as advisory in the reference method.

15.4.7. Surrogate acceptance criteria are both matrix and concentration level specific (e.g. low level vs. medium level soils). When analyzing matrices or concentration levels for which no acceptance criteria are available, the closest approximation of available acceptance criteria may be provided as estimates for advisory purposes only. Method default limits of 30-160% are also applied for any combination of sample matrix, preparation, clean-up, method or instrument without statistical limits.

15.5. Blank Spikes (BS)/Blank Spike Duplicates (BSD)

15.5.1. The BS recovery values should fall within the specified recovery acceptance limits. If an BSD is performed then relative percent difference (RPD) acceptance limits may also apply, if available.

15.5.2. BS recovery acceptance windows are determined statistically from method and matrix-specific laboratory data updated on a periodic basis. Project or method specific limits may supersede laboratory acceptance criteria.

15.5.2.1. The RPDs between the BS/BSD samples must be measured and reported

15.5.2.2. Evaluate the BS/BSD RPD and note any deviation >30% in the reviewer checklist.

15.5.3. Method default limits of 30-160% are also applied for any combination of sample matrix, preparation, clean-up, method or instrument without statistical limits.

15.6. Matrix Spike/Matrix Spike Duplicates (MS/MSD)

15.6.1. Matrix Spike/Matrix Spike Duplicate recovery values should fall within the specified recovery acceptance limits.

15.6.2. MS/MSD recovery and RPD acceptance windows are ideally determined statistically from method and matrix-specific laboratory data updated on a periodic basis. Certain methods or clients may require project specific MS/MSD recovery and RPD acceptance windows.

15.6.2.1. The RPDs between the MS/MSD samples must be measured and reported.

15.6.2.2. Evaluate the MS/MSD RPD and note any deviation >30% in the reviewer checklist.

15.6.3. Method default limits of 30-160% are also applied for any combination of sample matrix, preparation, clean-up, method or instrument without statistical limits.

15.7. Holding Times

15.7.1. Samples must be extracted within holding times (7 days for water samples and 14 days for solid samples).

15.7.2. Extracts must be analyzed within the extract holding time (40 days from the initial date of extraction).

15.7.3. In the event that re-extraction due to an out of control event requires that samples be re-extracted after their extraction holding time has elapsed (7 days for water and 14 days for tissues/solids) the analyst should analyze and report both extraction sets, whenever practical, distinguishing between the initial extraction and re-extraction on all deliverables. This will document that the samples were originally extracted within holding times and may allow for comparisons that will determine whether any of the more volatile analytes were lost in the interval between extractions.

15.7.4. If any extracts are analyzed after the 40-day extract holding time has elapsed, the analyst must document this in the reviewer checklist.

16. Corrective Actions for Out of Control of Unacceptable Data

16.1. Corrective actions may include any, but are not limited to, the following:

16.1.1. Narration – the failure and the extent of the failure (i.e. the percent deviation from the expected value) will be described in the reviewer checklist.

16.1.2. Reevaluation – the data will be reconsidered by the analyst and then the analyst will corroborate with a peer analyst or supervisor to confirm or revise the initial evaluation.

16.1.3. Repreparation – the remaining unanalyzed aliquot of the extract is transferred to a new vial and analyzed.

16.1.4. Reanalysis – the extract aliquot that was originally prepared is reinjected and run on the gas chromatograph again.

16.1.5. Re-extraction – a re-extraction request is filled out (Form 0030F). Copies of the form are provided to the extractions department, the project manager, the QA manager and the lab manager. The remaining sample is extracted.

16.1.6. Instrument Maintenance – this will vary with the problem experienced and the analyst's experience and a description of the maintenance performed will be documented in ELEMENT.

16.1.7. Recalibration – a new initial calibration is evaluated, and the associated samples reanalyzed.

16.1.8. Revised data submission – if it is determined through reevaluation or reanalysis that an error was made and subsequently corrected then the data will be resubmitted with the appropriate corrections and explanation for data review. Both the original and finalized data will be provided for data review.

16.1.9. Formal corrective action entry – formal corrective actions are entered into the ARI database, when an out of control event cannot be remedied through the above corrective action process.

16.2. Mass Spectrometer Tuning

16.2.1. When the MS does not produce an acceptable mass spectrum when injected with 25 µg/mL of DFTPP, re-inject the DFTPP. If the spectrum again fails to meet the criteria found in Appendix 20.3, the MS may need to be re-tuned.

16.2.2. If the re-tuned mass spectrum still fails to meet the criteria found in Appendix 20.3, the MS may require maintenance. The MS should be vented, and maintenance may include replacing the filaments, cleaning the MS source, cleaning the MS lenses, cleaning the MS mass selective filter, or replacing the electron multiplier. All maintenance must be documented in Element.

16.3. If Peak tailing factors and or DDT breakdown exceed the limits found in Section 10, the chromatographic system may need maintenance. Inspect and perform maintenance on the chromatographic system. This maintenance may include, but is not limited to: replacing the inlet liner and liner packing, cleaning the inlet liner, cleaning or replacing the inlet seal, cleaning or replacing the inlet body, replacing the split line, cleaning the split arm, clipping a length from the front of the column, or replacing the column. All maintenance must be documented in Element.

16.4. When an Initial Calibration RSD for an analyte exceeds 15%

16.4.1. Examine the initial calibration analyses. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.4.1.1. When the failure appears to be the result of an improperly prepared calibration standard, re-prepare the standard and reanalyze it. Reanalyzing or replacing a single standard must NOT be confused with the practice of discarding individual calibration results for specific target compounds in order to pick and choose a set of results that will meet the RSD or correlation criteria for the linear model. The practice of discarding individual calibration results is addressed as a fourth alternative option and is very specific as to how a set of results are chosen to be discarded. If a standard is reanalyzed, or a new standard is analyzed, then ALL of the results from the original analysis of the standard in question must be discarded. Further, the practice of running additional standards at other concentrations and then picking only those results that meet the calibration acceptance criteria is EXPRESSLY PROHIBITED, since the analyst has generated data that demonstrate that the linear model does not apply to all of the data.

16.5. RRF failure- If the minimum RRF of 0.01 is not met for all analytes and calibration points perform any appropriate corrective action found in section 16.1

16.6. When an Initial Verification (ICV) fails:

16.6.1. At the discretion of the analysts, a second ICV may be immediately run after the failing ICV. If the second ICV meets all ICV criteria, then the sequence may begin.

16.6.2. If the second injection of the ICV fails, perform the appropriate corrective action(s) from Section 16.1 and re-calibrate the instrument.

16.6.3. DoD-QSM requires that %D for all analytes in the ICV is ≤ 20%. For DoD analyses, immediately analyze two additional consecutive ICVs.

16.6.3.1. When both ICVs meet acceptance criteria the analytical sequence may be continued.

16.6.3.2. If either fails or if two consecutive ICVs cannot be run, perform corrective actions and repeat the analytical sequence.

16.6.4. If a CCV is used both as an ICV and CCV (in the middle of an analytical sequence) then the ICV requirements must be applied.

16.7. When a Continuing Calibration Verification (CCV) fails:

16.7.1. Perform any appropriate corrective action(s) from Section 16.1 if not a D0D-QSM project.

16.7.2. DoD-QSM requires that %D for all analytes in the CCV be ≤ 50%. For DoD analyses, immediately analyze two additional consecutive CCVs.

16.7.2.1. When both CCVs meet acceptance criteria, samples analyzed since the last acceptable CCV may be reported and the analytical sequence continued.

16.7.2.2. If either fails or if two consecutive CCVs cannot be run, perform corrective actions and repeat the analytical sequence.

16.8. Internal Standards

16.8.1. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.8.1.1. If the calculations were incorrect, correct the calculations and verify that the internal standard response met their acceptance criteria.

16.8.1.2. If the internal standard compound spiking solution was improperly prepared, concentrated, or degraded, re-prepare solutions and re-extract/reanalyze the samples.

16.8.1.3. If the instrument malfunctioned, correct the instrument problem and reanalyze the sample extract. If the instrument malfunction affected the calibration, recalibrate the instrument before reanalyzing the sample extract.

16.8.1.4. If the above actions do not correct the problem, then the problem may be due to a sample "matrix effect".

16.9. Surrogates

16.9.1. Examine the bench sheet to verify spiking levels are correct.

16.9.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.9.2.1. If the above actions do not correct the problem, then the problem may be due to a sample matrix effect.

16.10. Method Blanks and Instrument Blanks-

16.10.1. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.10.2. Corrective action for a method blank which fails acceptance criteria may involve re-extraction and reanalysis of all associated samples and/or "B" flagging of the associated sample data. Each occurrence will be evaluated on an individual basis upon consultation with the Project Manager, the client, the Laboratory Supervisor, and the Laboratory Manager.

16.10.3. Corrective action for an instrument blank which fails acceptance criteria may involve re-preparation of the instrument blank and re-analyzing the instrument sequence.

16.11. Blank Spikes (BS)/Blank Spike Duplicates (BSD)

16.11.1. Examine the bench sheet to verify spiking levels are correct.

16.11.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.12. Matrix Spike (MS)/Matrix Spike Duplicates (MSD)

16.12.1. Examine the bench sheet to verify spiking levels are correct.

16.12.2. Recoveries are advisory and should not necessarily result in re-extraction.

16.12.3. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.13. Sample Dilution- Should the quantitated value of any analyte exceed the working range of the curve; a dilution must be performed such that the analyte's quantitated value is within the curve range.

16.13.1. Additional internal standard must be added to the diluted extract to maintain the required 2µg/mL (0.2µg/mL for low sim) of each internal standard in the extracted volume.

16.13.2. All dilutions should keep the response of the major constituents in the upper half of the linear range of the curve.

16.13.3. When peaks from an analyte saturate the detector

16.13.3.1. The analyst must note the saturation in the reviewer checklist.

16.13.3.2. The analyst should analyze an Instrument Blank consisting of clean solvent until the system has been decontaminated

16.14. In particular circumstances, the Project Manager (PM) may decide that meeting QC limits may be of relatively little significance when considered against other project issues, such as data usability and turn-around-time. Such a decision is particularly likely when continuing calibration responses are too high but there are no analytes identified in the samples (detection limits will not be compromised since response has improved). QC criteria specified in the work plan will be considered by the Project Manager.

16.14.1. The samples need not be re-analyzed if the PM so instructs the analyst. The analyst should have the PM initial all such decisions. It is preferable that the Client be consulted, but that decision is made by the PM. (See ARI Project Management SOP #005S)

16.14.1.1. All QC limit issues (including continuing calibration limits and all QC recovery limits) may be decided by the PM, the data reviewer, and/or GC Supervisor, preferably after consultation with the Client.

17. Contingencies for Handling Out-of-Control or Unacceptable Data

17.1. See Section 16.2 for guidance on dealing with out-of-control tuning events.

17.2. See section 16.3, 16.4 and 16.5 for guidance on dealing with out-of-control events related to initial calibrations (RRF or RSD), peak tailing factors, or DDT breakdown.

17.3. See section 16.6 for guidance on dealing with ICV out-of-control events.

17.4. See section 16.7 for guidance on dealing with CCV out-of-control events.

17.5. See Section 16.8 for guidance on dealing with internal standard out-of-control events.

17.6. See Section 16.9 for guidance on dealing with surrogate out-of-control events.

17.7. See Section 16.10 for guidance on dealing with method blank and instrument blank related out-of-control events.

17.8. See Section 16.11 for guidance on dealing with BS/BSD related out-of-control events.

17.9. See Section 16.12 for guidance on dealing with MS/MSD related out-of-control events.
17.10. See Section 16.13 for guidance on dealing with over range value related out-of-control events.
17.11. See Section 16.14 for guidance on dealing with particular circumstances out-of-control events.

18. Waste Management

18.1. All extract vials and standard vials must be disposed of by placing them in the blue hazardous waste drum in the station set aside for this purpose. No vials may be thrown in the trash or receptacles not expressly designated for this purpose.
18.2. All solvents must be disposed of by pouring them out over charcoal. No solvent may be poured down the drain or disposed of in any other non-hygienic manner.
18.3. All spent charcoal must be disposed of by placing it in the charcoal disposal bin located in the hazardous waste storage area.
18.4. Waste must not be accumulated in the fume hoods and must be disposed of at the appropriate waste disposal location.

19. Method References

19.1. "Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS): Method 8270E, Test Methods for Evaluating Solid Waste (SW-846), Revision 6, June 2018.
19.2. “EPA Method 625.1-Base/neutrals and acids”, Appendix A to CFR Part 136, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. December 2016.
19.3. “Determinative Chromatographic Separations”: Method 8000D, (SW-846), Revision 5, March 2018.
19.4. “Department of Defense (DOD) Department of Energy (DOE) Consolidated Quality Systems Manual for Environmental Laboratories”, Final Version 5.3 2019.

20. Appendices

20.1. Appendix 20,1: ARI Acceptance Criteria
20.2. Appendix 20. 2: PAH Target analyte List
20.3. Appendix 20.3: DFTPP key ions and ion abundance criteria.
20.4. Appendix 20.4: Example Chromatogram of Calibration standard
20.5. Appendix 20.5: Example pages from GC/MS PAH organics virtual logbook
20.6. Appendix 20.6: Peak Tailing Factor Calculation
20.7. Appendix 20.7: Selected PCB congeners by GC/MS
20.8. Appendix 20.8: Method 625.1 requirements

Appendix 20.1

ARI ACCEPTANCE CRITERIA

QC Check	Minimum Frequency	Acceptance Criteria	Corrective Action	Flagging Criteria	Comments
Demonstrate acceptable analyst capability	Prior to using any test method and at any time there is a significant change in instrument type, personnel, or test method (see ARI SOP 1017S)	QC acceptance criteria published by DoD, if available; otherwise method specified criteria.	1) Recalculate results 2) Locate and correct the source of the problem and repeat the test for all parameters of interest.	Not applicable (NA)	This is a demonstration of ability to generate acceptable accuracy and precision using four replicate analyses of a QC check sample (e.g., LCS or PT sample) as described in ARI SOP 1017S. Analysis is not allowed by analyst until she/he has completed a successful demonstration of capability.
Method detection limit (MDL) study	At initial set-up and subsequently once per 12-month period; otherwise quarterly MDL verification checks shall be performed (see box D-18)	See 40 CFR 136B. MDL verification checks must produce a signal at least 3 times the instrument's noise level.	Run MDL verification check at higher level and set MDL higher or reconduct MDL study	NA	Samples should not be analyzed without a valid MDL.
Tuning	Prior to the initial calibration	Refer to method for specific ion criteria.	Retune instrument and verify. Rerun affected samples.	Flagging criteria are not appropriate	Problem must be corrected. No samples may be accepted without a valid tune.
DDT breakdown check	Prior to the initial calibration	Degradation < 20% for DDT. Benzidine and PCP peak tailing must be <2.	Retune instrument and verify. Rerun affected samples.	Flagging criteria are not appropriate	Problem must be corrected. No samples may be accepted without a valid tune.
Retention time (RT) window calculated for each analyte and surrogate	At method set-up and after major maintenance (e.g., column change)	RT width is ± 3 times standard deviation for each analyte RT from 72-hour study.	NA	NA	
Evaluation of relative retention times (RRT)	With each sample	RRT of each target analyte in each calibration standard within ± 0.06 RRT units.	Correct problem, then rerun ICAL.	Flagging criteria are not appropriate.	

QC Check	Minimum Frequency	Acceptance Criteria	Corrective Action	Flagging Criteria	Comments
Minimum five-point Initial calibration for all analytes (ICAL)	Initial calibration prior to sample analysis	1)Analytes' RRFs must meet 0.01 across calibration range. 2) Analytes' RSDs must be less than or equal to 15%, or the analyte must employ a linear or non-linear calibration model with a coefficient of determination (R^2) greater than 0.99. 3)Up to 10% of the total analytes may fail 1 and 2 above.	Correct problem then repeat initial calibration.	Analytes which fail the RRF or RSD/R^2limits must have their values flagged with Q qualifiers to mark the values as estimates.	Problem must be corrected. No samples may be run until ICAL has passed.
Second source calibration verification	Once after each initial calibration	Value of second source for all analytes within ± 30% of expected value (initial source) Up to 10% of analytes may exceed SCV criteria if they show a recovery within 50-150% of the true value	Correct problem, verify second source standard. Rerun verification. If that fails, correct problem and repeat ICAL	Flagging criteria are not appropriate.	Historic data shows that some analytes will very seldom meet ±20% when purchased from different vendors. Second sources may not be available for all analytes.
Retention time established for all analytes and surrogates	Once per ICAL and at the beginning of the analytical shift	Position shall be set using the midpoint standard of the calibration curve or the value in the CCV run at the beginning of the analytical shift.	NA	NA	
Initial and Continuing Calibration verification (ICV/CCV)	Daily, before sample analysis (ICV); after every 12 hours of analysis time; and at the end of the analytical batch run (CCV).	1. Analytes RRF must meet 0.01 2. ICV %Difference/Drift for analytes ≤ 20%D Up to 20% of the target analytes may fail the criteria in 1 and 2 so long as the sample analyses associated with the ICVS are Q flagged. 3: CCV %Difference/Drift for analytes ≤ 50%.	ICV FAILURE: Correct problem, then rerun ICV. If that fails, repeat initial calibration. CCV FAILURE: Perform corrective action from section 16.1	Apply Q-flag to reported target analytes exceeding criteria.	.
Internal standards verification	All ICV	Retention time ± 30 seconds from retention time of the midpoint standard in the ICAL or most recent ICV. EICP area within - 50% to + 100% of ICAL midpoint standard	Inspect mass spectrometer and GC for malfunctions. Reanalysis of samples analyzed while system was malfunctioning is mandatory.	Flagging criteria are not appropriate.	Sample results are not acceptable without a valid IS verification.
Internal standards verification for samples, batch QC, and CCV	All samples, batch QC, and the CCV	Retention time ± 10 seconds from retention time of the ICV. EICP area within -50% to +100% of ICV	Rerun affected samples	If corrective action fails in field samples, associated batch QC, or the CCV apply *-flag to the non-compliant IS.	

QC Check	Minimum Frequency	Acceptance Criteria	Corrective Action	Flagging Criteria	Comments
Method blank and instrument blank	One per preparatory batch	No analytes detected > ½ MRL. For common laboratory contaminants, no analytes detected ≥ MRL.	Correct problem, if required, re-prep then reanalyze method blank and all samples processed with the contaminated blank.	Apply B-flag to all results for the specific analyte(s) reported above the MRL to all samples in the associated preparatory batch for method blanks exceeding criteria. Flagging criteria are not appropriate for instrument blanks.	
Blank spike control sample (BS) containing all reported analytes & surrogates	One BS per preparatory batch	QC acceptance criteria specified by ARI LQAP.	Correct problem, then re-prep and reanalyze the BS. Perform corrective action from section 16.1	Apply * flag to the specific analyte(s) if acceptance criteria are not met to BS results.	
Blank Spike Duplicate (BSD)	Project specific	RPD ≤30% between BS and BSD	Perform corrective action from section 16,1	Apply * flag to the specific analyte(s) if acceptance criteria are not met to BSD results.	The data shall be evaluated to determine the source of difference.
Matrix spike (MS)	One MS per preparatory batch per matrix	For matrix evaluation, use QC acceptance criteria specified by ARI LQAP for MS. MS recoveries are advisory.	Perform corrective action from section 16.1	Apply * flag to the specific analyte(s) if acceptance criteria are not met to MS results.	For matrix evaluation only. If MS results are out of control, data shall be evaluated to determine the source of difference and to determine if there is a matrix effect or analytical error.
Matrix spike duplicate (MSD) or sample duplicate	One per preparatory batch per matrix	RPD ≤ 30% (between MS and MSD or sample and sample duplicate) Limits are advisory.	Perform corrective action from section 16.1	Apply * flag to the specific analyte(s) if acceptance criteria are not met to MSD results.	The data shall be evaluated to determine the source of difference.
Surrogate spike	All field and QC samples	Method-specified criteria or laboratory's own in-house criteria; all surrogate recoveries must be > 10%.)	For QC and field samples, correct problem then re-prep and reanalyze all failed samples for failed surrogates in the associated preparatory batch, if sufficient sample material is available. If obvious chromatographic interference with surrogate is present, reanalysis may not be necessary.	Apply * flag to the specific analyte(s) if acceptance criteria are not met to surrogate results.	Alternative surrogates are recommended when there is obvious chromatographic interference.
Results reported between LOD and LOQ	When requested	Peak integration should meet signal to noise ratio of 3:1	NA	Apply J-flag to all results between MDL and MRL.	

Appendix 20.2
PAH Target Analytes, Quantitation Ions, Calibration Criteria and Associated Internal Standards

Internal Standard Associated Analyte	CAS Number	Primary Ion	Secondary Ion(s)	Min RRF	Max %RSD [1]	Max %D [1]
D8-Naphthalene (IS) [2]		136	--			
Naphthalene	91-20-3	128	--	0.70	15.0	20.0
D10-2-Methylnapthalene (SS) [3]	7297-45-2	152	150, 153	0.70	15.0	20.0
2-Methylnaphthalene	91-57-6	142	141, 143	0.70	15.0	20.0
1-Methylnaphthalene	90-12-0	142	141, 143	0.70	15.0	20.0
Benzo(b)Thiophene	95-15-8	134	89	0.01	15.0	20.0
D10-Acenaphthene (IS)		164	--			
2-Chloronaththalene	00091-58-7	162	162	0.01	15.0	20.0
Biphenyl	92-52-4	154	153	0.01	15.0	20.0
2,6-Dimethylnaphthalene	581-42-0	156	155	0.01	15.0	20.0
Acenaphthylene	208-96-8	152	150, 151	0.90	15.0	20.0
Acenaphthene	83-32-9	153	152, 154	0.90	15.0	20.0
Dibenzofuran	132-64-9	168	139, 169	0.80	15.0	20.0
2,3,5-Trimethylnaphthalene	2245-38-7	170	155	0.01	15.0	20.0
Fluorene	86-73-7	166	165, 167	0.90	15.0	20.0
D10-Phenanthrene (IS)		188	--			
Dibenzothiophene	132-65-0	184	185	0.01	15.0	20.0
Pentachlorophenol [4]	87-86-5	280	278	0.05	15.0	20.0
2,4,6-Tribromophenol (SS) [5]	118-79-6	141	143	0.05	15.0	20.0
Phenanthrene	85-01-8	178	176, 179	0.70	15.0	20.0
Anthracene	120-12-7	178	176, 179	0.70	15.0	20.0
Carbazole	86-74-8	167	166	0.01	15.0	20.0
1-methylphenanthrene	832-69-9	192	191	0.01	15.0	20.0
Fluoranthene-d10 (SS)	93951-69-0	212	208	0.60	15.0	20.0
Fluoranthene	206-44-0	202	200, 201	0.60	15.0	20.0
Pyrene	129-00-0	202	200, 201	0.60	15.0	20.0
D12-Chrysene (IS)		240	--			
Benzo(a)anthracene	56-55-3	228	226, 229	0.80	15.0	20.0
Chrysene	218-01-9	228	226, 229	0.70	15.0	20.0
D12-Perylene (IS)		264	--		15.0	
Benzo(b)fluoranthene	205-99-2	252	250, 253	0.70	15.0	20.0
Benzo(k)fluoranthene	207-08-9	252	250, 253	0.70	15.0	20.0
Benzo(j)fluoranthene	205-82-3	252	250, 253	0.70	15.0	20.0
Benzo(e)pyrene	192-97-2	252	250, 253	0.70	15.0	20.0
Benzo(a)pyrene	50-32-8	252	250, 253	0.70	15.0	20.0

Perylene	198-55-0	252	250, 253	0.01	15.0	20.0
Indeno(1,2,3-cd) pyrene	193-39-5	276	274, 277	0.50	15.0	20.0
D14-Dibenz(a,h)anthracene (SS)	D-53-70-3	292	291	0.40	15.0	20.0
Dibenz(a,h)anthracene	53-70-3	278	139, 279	0.40	15.0	20.0
Benzo(g,h,i)perylene	191-24-2	276	274, 277	0.50	15.0	20.0

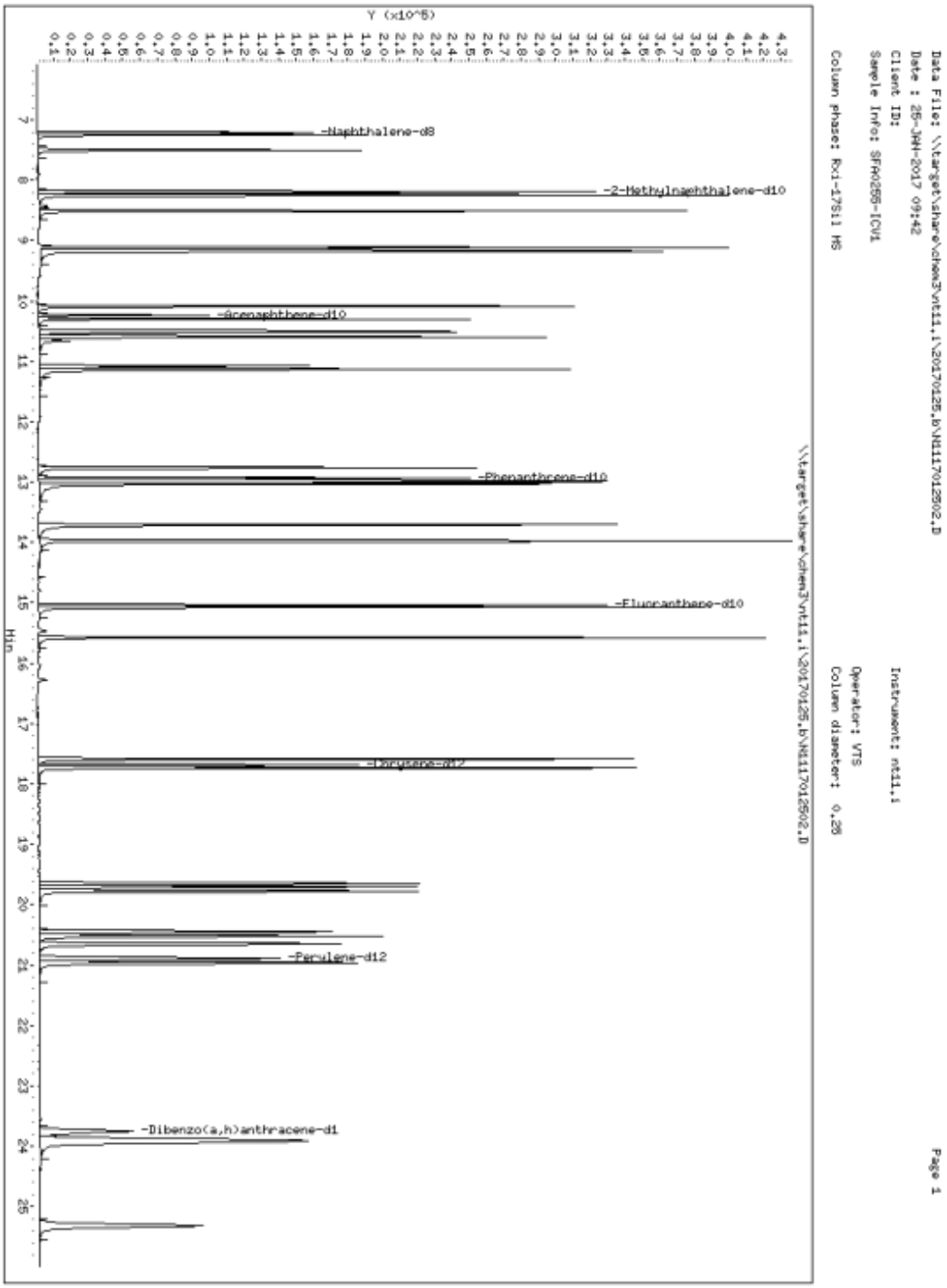
1 – A maximum of 2 compounds are allowed > 20%RSD .
2 – Compounds followed by (IS) are internal standards
3 – Compounds followed by (SS) are surrogate standards
4 – Optional Analyte
5 – This surrogate added only when Pentachlorophenol is a targeted analyte

Appendix: 20.3
DFTPP KEY IONS AND ION ABUNDANCE CRITERIA[1]

Mass	Ion Abundance Criteria
68	< 2% of mass 69
69	Present
70	< 2% of mass 69
197	< 2% of mass 198
198	Base peak or Present
199	5-9% of mass 198
365	> 1% of base peak
441	< 150% of mass 443
442	Base peak or Present
443	15-24% of mass 442

1. Raw data is rounded to three significant figures and one or less decimal point before comparison to the abundance criteria.

Appendix: 20.4
EXAMPLE CHROMATOGRAM OF CALIBRATION STANDARD



Appendix: 20.5
EXAMPLE PAGES OF VIRTUAL LOGBOOK

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE
SFA0255

Printed: 1/26/2017 8:12:55AM

Instrument: NT11 Element Column ID: E006480
Calibration ID: ZL00083 Tune File: 161216.U
EM Voltage: 2353

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SFA0255-TUN1	DFTPP	QC		1	E007446		
SFA0255-ICV1	Initial Cal Check	QC		2	E006577	E002870	
BFA0320-BLK1	Blank	QC		3		E002870	
BFA0320-BS1	LCS	QC		4		E002870	
17A0190-02	DA2 (Basin 3) 8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		5		E002870	
17A0190-03	DA3 (Basin 4) 8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		6		E002870	
17A0190-04	DA4 (Basin 5) 8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		7		E002870	
17A0195-01	KSC - MH-20.237 -8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		8		E002870	
17A0195-02	KSC - MH-20.235 -8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		9		E002870	
17A0195-03	KSC - MH-16.12 -8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		10		E002870	
17A0195-04	KSC - MH-15.10 -8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		11		E002870	
BFA0320-MS1	Matrix Spike	QC		12		E002870	
BFA0320-MSD1	Matrix Spike Dup	QC		13		E002870	
17A0195-05	KSC - OF-16 - W8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		14		E002870	
17A0195-06	KSC - OF-NDP - W8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		15		E002870	
17A0190-01	DA1 (Rx System)8270D-	SIM PAH Low (0.01 ug/L - 0.5 ug/L) 01		16		E002870	
SFA0255-CCV1	SIM PAH 250	QC		17	E006577	E002870	

Page 1 of 1

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20170125.b

	Time	Filename	LabID	ClientId	DF									
1	0926	N1117012501.D	SFA0255-TUN1		1	NO ISTDS FOUND								
2	0942	N1117012502.D	SFA0255-ICV1		1	7.21	221638	10.23	145546	12.92	286458	17.69	270379	20.89	263628
3	1013	N1117012503.D	SFA0255-LCV1		1	7.21	236521	10.23	149706	12.94	296790	17.69	297882	20.89	286171
4	1046	N1117012504.D	BFA0320-BLK1		1	7.21	209823	10.24	127178	12.92	240475	17.69	261459	20.89	268502
5	1118	N1117012505.D	BFA0320-BS1		1	7.21	224643	10.23	146324	12.92	287697	17.68	288037	20.89	287256
6	1149	N1117012506.D	17A0190-D1		5	7.21	237737	10.23	144735	12.92	252088	17.69	245938	20.89	282243
7	1220	N1117012507.D	17A0190-D2		3	7.21	220793	10.23	142050	12.92	276263	17.69	236409	20.89	259123
8	1252	N1117012508.D	17A0190-D3		1	7.21	234838	10.23	150579	12.92	290487	17.68	261735	20.89	269272
9	1324	N1117012509.D	17A0190-D4		1	7.22	211399	10.24	127012	12.92	218356	17.69	210439	20.90	260632
10	1356	N1117012510.D	17A0195-D1		1	7.21	224142	10.23	148934	12.92	285573	17.69	239906	20.89	263386
11	1427	N1117012511.D	17A0195-D2		1	7.21	230494	10.23	152661	12.92	293341	17.69	251162	20.89	271337
12	1458	N1117012512.D	17A0195-D3		1	7.21	223053	10.23	147219	12.92	290845	17.69	248371	20.89	270876
13	1530	N1117012513.D	17A0195-D4		1	7.21	238864	10.23	154039	12.92	297532	17.69	244430	20.89	275138
14	1601	N1117012514.D	BFA0320-MS1		1	7.21	253564	10.23	168800	12.92	322809	17.69	291355	20.89	307409
15	1632	N1117012515.D	BFA0320-MSD1		1	7.21	244945	10.23	162638	12.92	307675	17.69	263454	20.89	287731
16	1704	N1117012516.D	17A0195-D5		1	7.21	224053	10.23	130718	12.92	235703	17.69	229616	20.89	262068
17	1735	N1117012517.D	17A0195-D6		1	7.21	220375	10.23	150175	12.92	297429	17.69	264403	20.89	292951
18	1806	N1117012518.D	17A0190-D1		1	7.21	225836	10.23	129678	12.93	230786	17.69	290847	20.91	316538
19	1838	N1117012519.D	SFA0255-DCV1		1	7.21	213677	10.24	152986	12.94	294771	17.69	251512	20.89	304195

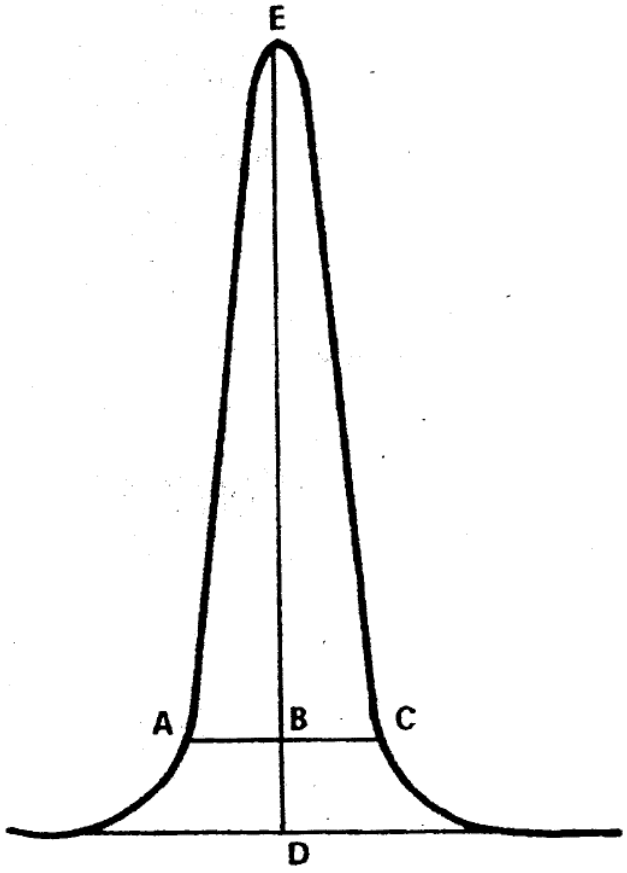
MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20170125.b

ARI Job No.: SFA0 Method: DFTPP.m Instrument: nt11.i Date: 25-JAN-2017

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0926	N1117012501.D	SFA0255-TUN1		1	NO MANUAL INTEGRATION
0942	N1117012502.D	SFA0255-ICV1		1	NO MANUAL INTEGRATION
1013	N1117012503.D	SFA0255-LCV1		1	NO MANUAL INTEGRATION
1046	N1117012504.D	BFA0320-BLK1		1	NO MANUAL INTEGRATION
1118	N1117012505.D	BFA0320-BS1		1	NO MANUAL INTEGRATION
1149	N1117012506.D	17A0190-01		S	NO MANUAL INTEGRATION
1220	N1117012507.D	17A0190-02		1	Acenaphthene,
1252	N1117012508.D	17A0190-03		1	NO MANUAL INTEGRATION
1324	N1117012509.D	17A0190-04		1	NO MANUAL INTEGRATION
1356	N1117012510.D	17A0195-01		1	1-Methylnaphthalene,
1427	N1117012511.D	17A0195-02		1	1-Methylnaphthalene,
1458	N1117012512.D	17A0195-03		1	NO MANUAL INTEGRATION
1530	N1117012513.D	17A0195-04		1	NO MANUAL INTEGRATION
1601	N1117012514.D	BFA0320-MS1		1	NO MANUAL INTEGRATION
1632	N1117012515.D	BFA0320-MSD1		1	NO MANUAL INTEGRATION
1704	N1117012516.D	17A0195-05		1	1-Methylnaphthalene,
1735	N1117012517.D	17A0195-06		1	1-Methylnaphthalene,

Appendix 20.6: Peak Tailing Factor Calculations

$$RF = \frac{(A_s)\,(C_{is})}{(A_{is})\,(C_s)}$$



TAILING FACTOR= $\frac{BC}{AB}$

Example calculation: Peak Height = DE = 100 mm
10% Peak Height = BD = 10 mm
Peak Width at 10% Peak Height = AC = 23 mm
AB = 11 mm
BC = 12 mm

Therefore: Tailing Factor = $\frac{12}{11}$ = 1.1

Appendix 20.7: Selected PCB congeners by GC/MS

Selected PCB congeners may also be analyzed under the guidance of this SOP. The selected PCB method utilizes a unique scan descriptor tailored for the characteristic PCB ions. The SOP pertains to all aspects of the selected PCB congener analysis with modifications made to the scan descriptor and a specific PCB congener calibration. The target congeners for this procedure are PCB-8, PCB-18, PCB-28, PCB-44, PCB-52, PCB-66, PCB-101, PCB-105, PCB-118, PCB-126, PCB-128, PCB-138, PCB-153, PCB-169, PCB-170, PCB-180, PCB-187, PCB-195, PCB-206, PCB-209. Two internal standards used for quantitation are d10-Phenanthrene and d12-Chrysene. The target analytes and associated internal standards are shown below in table 1. The calibration is a six-point calibration from 5ng/ml to 1000ng/ml. The six calibration points used are 5, 10, 25, 50, 75, and 100ng/ml. The second source calibration verification is not run with the calibration as one is not readily available. Eight discrete sim scan descriptors are employed: one for each native/c13 congener pair and one for each internal standard. The internal standard concentration is static at 200ng/ml for all calibration levels.

See table 1 below which outlines the ions acquired during acquisition and the calibration requirements.

Table 1
PCB Target Analytes, Quantitation Ions, Calibration Criteria and Associated Internal Standards

Internal Standard Associated Analyte	CAS Number	Primary Ion	Secondary Ion(s)	Min RRF	Max %RSD	Max %D
D10-Phenanthrene (IS)	1517-22-2	188	184			
PCB-8	34883-43-7	222	152, 186	0.2	15.0	20.0
PCB-18	37680-65-2	186	256, 221	0.2	15.0	20.0
PCB-28	7012-37-5	258	186, 150	0.2	15.0	20.0
PCB-44	41464-39-5	222	292, 257	0.2	15.0	20.0
PCB-52	35693-99-3	292	222, 184	0.2	15.0	20.0
PCB-66	32598-10-0	292	220, 184	0.2	15.0	20.0

PCB-101	37680-73-2	326	254, 291	0.2	15.0	20.0
PCB-105	32598-14-4	326	256, 292	0.2	15.0	20.0
PCB-118	31508-00-6	326	256, 207	0.2	15.0	20.0
PCB-153	35065-27-1	360	290, 207	0.2	15.0	20.0
c13-PCB-37	208263-79-0	270	268, 198	0.2	15.0	20.0
c13-PCB-47	NA	304	302, 232	0.2	15.0	20.0
c13-PCB-54	234432-88-3	304	302, 232	0.2	15.0	20.0
c13-PCB-111	235416-29-2	338	336, 266	0.2	15.0	20.0
D12-Chrysene (IS)	1719-03-5	240	241			
PCB-126	57465-28-8	326	254, 207	0.2	15.0	20
PCB-128	38380-07-3	362	290, 325	0.2	15.0	20
PCB-138	35065-28-2	360	325, 290	0.2	15.0	20
PCB-169	32774-16-6	207	362, 290	0.2	15.0	20
PCB-170	35065-30-6	396	324, 281	0.2	15.0	20
PCB-180	35065-29-3	207	394, 324	0.2	15.0	20
PCB-187	52663-68-0	394	324, 361	0.2	15.0	20
PCB-195	52663-78-2	281	358, 430	0.2	15.0	20
PCB-206	40186-72-9	207	281, 464	0.2	15.0	20
PCB-209	2051-24-3	498	428, 356	0.2	15.0	20
c13-PCB-138	208263-66-5	372	370, 302	0.2	15.0	20.0
c13-PCB-178	232919-67-4	406	408, 336	0.2	15.0	20.0

This procedure is being developed to access the validity of polymeric sampling procedures in aquatic environments and must meet all method requirements for DFTPP tuning, peak tailing, and DDT breakdown as detailed in the main section of this SOP.

Appendix 20.8: Modifications Required for EPA Method 625.1(These modifications are only implemented when specifically requested by a client, otherwise method 625.1 is analyzed as 8270E described previously in this SOP)

Please refer to SOP 804S section 20.7 for guidance.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

Polychlorinated Biphenyls (Aroclor) Analysis

SOP 403S
Revision 24

Revision Date: 7/19/18
Effective Date: 7/19/18

Prepared by:

Josh Rains, Van Spohn

Approvals:

Brian N. Bebee, Laboratory Section Manager

David R. Mitchell, Quality Assurance Mgr.

Annual Review

SOP Number: _____

Title: _____

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

1. Scope and Application

1.1. This procedure summarizes ARI's protocol for identifying and quantifying mixtures of Polychlorinated Biphenyls (PCBs), known as Aroclors, in a variety of matrices including sediments, soils, solids, tissues, waters, and waste products (oils, etc.) The procedures described meet the requirements of EPA Method 8082A (Reference 19.1) and EPA Method 608 for PCB Aroclors only (Reference 19.2). The following Aroclors may be determined using this protocol:

Table 01: Aroclor Analytes	
PCB Mixture	**CAS Number**
Aroclor-1016	12674-11-2
Aroclor-1221	11104-28-2
Aroclor-1232	11141-16-5
Aroclor-1242	53469-21-9
Aroclor-1248	12672-29-6
Aroclor-1254	11097-69-1
Aroclor-1260	11096-82-5
Aroclor-1262	37324-23-5
Aroclor-1268	11100-14-4

1.2. Detection limits- depending on the volume of sample extracted, the detection limits range from 0.01 to 10ug/L for aqueous samples and from 4 to 800ug/kg (based on dry weight) for solid samples.

Table 02: Aroclor Reporting Limits			
Sample Matrix	**Extract Volume or Weight**	**Final Volume**	**Reporting Limit**
Aqueous	500 mL	5 mL	1 ppb
	500 mL	1 mL	0.1 ppb
	1000 mL	0.5 mL	0.01 ppb
(TCLP)	100 mL	10 mL	10 ppb
Solids	12 g	4 mL	33 ppb
	12.5 g	2.5 mL	20 ppb
	12.5 g	2.5 mL	10 ppb
	12.5 g	2.5 mL	4 ppb
	1 g	40 mL	800 ppb
	5 g	40 mL	800 ppb

Tissue	10 g	5 mL	50 ppb
	25 g	5 mL	20 ppb
	25 g	1 mL	4 ppb

1.3. Procedures described in this document allow the flexibility to meet the requirements of various analytical programs, including the EPA SW-846 methods, EPA Contract Laboratory Program (CLP), NELAP and the Department of Defense Quality Systems Manual (DoD-QSM). The table in Appendix 20.1 outlines ARI's routine procedure. Please refer directly to DOD-QSM 5.1 for guidance on the special requirements of the DoD-QSM. Analysts are responsible for determining which QA program is applicable to a set of samples prior to beginning analyzes and complying with all project specific analytical requirements.

1.4. The reference methods for this procedure are listed in Section 19.

2. Summary of the Procedure

2.1. Surrogate standards are added to a measured volume or weight of sample which is extracted using an appropriate organic solvent and extraction technique. The resulting extract is concentrated to a specified final volume. Project or Protocol required Quality Assurance Samples are prepared and analyzed using identical techniques.

2.1.1. A variety of cleanup steps may be applied to the extracts, depending on the nature of any co-extracted matrix interferences and the requested target analytes. All cleanup techniques must be applied to all sample extracts including QC samples (MB, BS, MS, MRL, and DUP).

2.1.1.1. Following any cleanup, the extract is concentrated to a designated final effective volume and delivered to ARI's Gas Chromatography Laboratory for identification and quantification of polychlorinated biphenyls.

2.1.1.1.1. Following addition of internal standards 1-2 µL of the extract is injected onto a GC using an auto-sampler and splitless injection technique.

2.1.1.1.1.1. The injected sample is split onto two columns by passing through a glass Y connector. Analytes are detected and quantified using ECD detectors.

2.1.1.1.1.2. Identified Target analytes are quantified using an internal standard procedure as described in Sections 10 and 11

3. Definitions

3.1. Aroclors- mixtures of polychlorinated biphenyl congeners

3.2. BNB (1-Bromo-2-Nitrobenzene): Internal standard.

3.3. Initial Calibration Verification (ICV): An instrument calibration standard is used to verify that the current instrument calibration is acceptable.

3.4. Continuing Calibration Verification (CCV): An instrument calibration standard is used to verify that the current instrument calibration is acceptable.

3.5. Continuing Calibration Verification Standard (CCVS): The standard prepared at the mid-point concentration of the initial calibration, and prepared from the same source as the initial calibration used to perform the ICV and CCV.

3.6. DCBP (Decachlorobiphenyl): Surrogate standard.

3.7. ECD (Electron Capture Detector): A detector with a high specificity and sensitivity to organic molecules with highly electronegative functional groups. An ECD is especially suitable for identifying and quantifying organochlorine compounds including Aroclors and selected pesticides and herbicides.

3.8. HBBP (2,2',4,4',5,5'-Hexabromobiphenyl): Internal standard.

3.9. Second source Calibration Verification (SCV): An instrument calibration standard purchased from a secondary vendor is used to verify that the current instrument calibration is acceptable.

3.10. Instrument Blank (IB): A QC sample made by adding surrogates to clean solvent used to measure instrument background.

3.11. Internal Standard (IS): internal standards are compounds added to each standard, sample, and QC sample such that their concentration is the same in each of these sample types. Target analyte response is normalized to the response of these internal standards.

3.12. Blank Spike (BS) – A sample matrix, free from the analytes of interest, spiked with verified amounts of analytes or a material containing known amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision or to assess the performance of all or a portion of the measurement system. Aroclor 1660 (Section 7.1) is the routine BS analyte.

3.13. Blank Spike Duplicate (BSD): A replicate BS often used to assess the precision of an analytical method. When insufficient sample volumes exist to perform a required MS/MSD analysis, an BS/BSD may be performed to assess the precision of the analytical method. The BSD is prepared and analyzed identically to the BS. Aroclor 1660 (Section 7.1) is the routine BSD analyte.

3.14. ELEMENT (Laboratory Information Management System): Software used to compile and report final chromatographic data.

3.15. MDL (Method detection Limit): The lowest result that can reliably be distinguished in a matrix from a blank. Also referred to as the limit of Detection (LOD)

3.16. MRL (Method Reporting Limit)–The lowest result that may be reported unqualified based on the lowest curve point.

3.17. Matrix Spike (MS): A sample prepared by adding a known mass of target analyte to a

specified amount of sample matrix for which an independent estimate of target analyte concentration is available. Matrix spikes are used to determine the effect of the sample matrix on the recovery efficiency of an analytical method. Aroclor 1660 (Section 7.1) is the routine MS analyte.

3.18. Matrix Spike Duplicate (MSD): A replicate matrix spike prepared in the laboratory and analyzed to obtain a measure analytical precision. Aroclor 1660 (Section 7.1) is the routine MSD analyte.

3.19. Method Blank (MB): A sample of a matrix similar to the batch of associated samples (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences are present at concentrations that impact the analytical results for sample analyses.

3.20. PCBs - polychlorinated biphenyls- biphenyl molecules with varying degrees of chlorination

3.21. MRL (Method Reporting Limit): A matrix spike prepared at reporting limit, used to determine MDL(LOD) and MRL.

3.22. Solvent Blank (SB) – Clean solvent is analyzed using the same conditions as a regular sample. A solvent blank is analyzed to detect and/or remove sample carryover from one analysis to another.

3.23. Surrogate – A substance with properties that mimic the analyte of interest. It is unlikely to be found in environment samples and is added to them for quality control purposes.

3.24. Target Software: Software used to integrate and reduce raw chromatographic data.

3.25. TCMX (Tetra chloro-m-Xylene): Surrogate standard

4. Interferences

4.1. Extraction Interferences: Data from all blanks, samples, and spikes must be evaluated for interferences. Determine if the source of interference is in the preparation and/or cleanup of the samples and take corrective action to eliminate the problem.

4.1.1. Method interferences are reduced by washing all glassware with hot soapy water, a weak HCL acid bath, and finally OFW before being baked at 500 degrees centigrade overnight.

4.1.2. Recycled glassware method interferences are reduced by washing all glassware with hot soapy water, a weak HCL acid bath, OFW, acetone, and methylene chloride in the order listed.

4.1.3. High purity reagents must be used to minimize interference problems.

4.2. Co-extraction of analytes which respond to the ECD detector may cause interferences. These co-extracted contaminants may be removed by an appropriate clean-up technique.

4.2.1. Typical clean-up procedures include silica gel clean-up, removal of elemental sulfur, and sulfuric acid treatment as described in SOP 3327S.

4.3. Contamination by carryover can occur whenever high-concentration and low-concentration samples are sequentially analyzed. To reduce carryover, the sample syringe must be rinsed out between samples with solvent. Whenever an unusually concentrated sample is encountered, it should be followed by the analysis of a solvent blank to check for cross contamination (if needed).

4.4. Aroclors are multi-component mixtures. When samples contain more than one Aroclor, a higher level of analyst expertise is required to assure proper qualitative and quantitative analysis. In these cases, PCB congener analysis may be more appropriate.

5. Safety

5.1. The toxicity and carcinogenicity of each reagent used in this method is not precisely defined. However, all compounds and solutions should be treated as health hazards, and exposure of these chemicals to skin and clothing should be minimized to the lowest possible level by whatever means available.

5.2. Wear nitrile gloves, safety glasses, and laboratory coats when working with reagents, standards and sample extracts to minimize exposure to chemicals.

5.3. Standard solutions should be handled in the fume hoods to avoid exposure to fumes.

5.4. All GC split vents are connected to an exhaust vent

5.5. ARI maintains a current awareness file of Occupational Safety and Health Administration (OSHA) regulations regarding the safe handling of the chemicals specified in this method. A reference file of safety data sheets (SDS) is available to all personnel involved in the chemical analysis. Consult with SDS website for all chemicals handled. www.msdshazcom.com

6. Equipment and Supplies

6.1. Gas chromatograph

6.1.1. Gas chromatograph - An analytical system with a temperature-programmable gas chromatograph suitable for splitless injection and all required accessories including:

6.1.2. ECD detectors

6.1.3. Autosampler

6.1.4. Analytical columns Fused-silica capillary columns - Columns used may vary depending on currently available technology (other column pairs may be used so long as they generate equivalent data):

6.1.4.1. Standard pair - Column 1: ZB-5, 30m, 0.53mm ID, 0.5µm film. Column 2: ZB-35, 30m, 0.53mm ID, 0.5µm film.

6.1.4.1.1. Alternate pair - Column 1: Rtx CLP1 30m, 0.32mm ID, 0.5µm film. Column 2:

Rtx CLP2, 30m, 0.32mm ID, 0.25µm film.

6.1.4.2. Guard Column 5m IP deactivated.

6.1.4.3. Y-connectors

6.1.5. High Purity Gases

6.2. Chemstation Data system - A computer system capable of collecting chromatographic data must be connected to the GC. The system must allow the recording of instrument response as a function of time

6.3. Syringes - 10µL, 25µL, 50µL, 100µL,250µL, 500µL, and 1000µL

6.4. Volumetric flasks, Class A - 5mL to 1000mL.

6.5. Bottles – 5, 10, 25, 50, and 100 mL glass with Teflon-lined screw caps or crimp tops.

6.6. Balance - Analytical, readable to 0.0001 g

6.7. Autosampler vials- clear 2 ml autosampler vials with PTFE crimp caps.

7. Reagents and Standards

7.1. Stock standard solutions (100 - 10,000µg/L) - Standard solutions can be prepared from neat standards or purchased as certified solutions. Certificates of analysis for all purchased neat and solutions are kept in PDF format in Element

7.2. Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available. Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

7.2.1. The laboratory should have acetone, hexane, methylene chloride, isooctane, carbon disulfide, toluene, methanol and other appropriate solvents for preparing standards.

7.2.2. Organic-free reagent water - All references to water in this method refer to ASTM Type 1 18 megaohm organic-free reagent water.

7.2.3. Neat chemicals do not have an expiration date regardless of what is shown on the certificate of analysis.

7.2.4. All reagents and chemicals used in any preparation must be documented in Element.

7.3. Stock Standard Preparation

7.3.1. Prepare stock standard solutions by accurately weighing about 0.2500g of pure material. Dissolve the material in pesticide quality methylene chloride or other suitable solvent and dilute to volume in a 25mL volumetric flask. Larger or smaller volumes can be used at the convenience of the analyst. When compound purity is assayed to be 97% or greater, the weight may be used without correction to calculate the concentration of the stock standard.

7.3.2. Commercially prepared stock standards may be used at any concentration if they are certified by the manufacturer or by an independent source.

7.3.3. Transfer the stock standard solutions into amber bottles with Teflon lined screw-caps. Store at >0 to 6°C and protect from light.

7.3.4. Stock standard solutions should be checked frequently for signs of degradation or evaporation, especially just prior to preparing calibration standards from them.

7.3.5. Stock standard solutions must be re-assayed or replaced after 1 year or sooner if comparison with quality control check samples indicates a problem.

7.4. Aroclor 1660- is a mixture of Aroclors 1016 and 1260 used to prepare the instrument calibration curve and as the spike in blank spikes and matrix QC - Purchased commercially as a 1000 µg/mL in Hexane stock solution.

7.4.1. Prepare an BS and MS spike solution by diluting 2.0 mL of the Aroclor 1660 stock to 100 mL using Acetone.

7.5. Standardized solutions (100 to 1000 µg/mL in Hexane) of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262 and 1268 are purchased from a commercial vendor.

7.6. Aroclor 2162 – A mixture of Aroclors 1221 and 1262 used for instrument calibration and as a non-routine BS or MS spike. The mixture is prepared by mixing equal volumes of the purchased Aroclor 1221 and 1262 standard solutions and therefore has each Aroclor at 500 µg/mL.

7.7. Aroclor 3268 – is a mixture of Aroclors 1232 and 1268 used for instrument calibration and as a non-routine BS or MS spike. The mixture is prepared by mixing equal volumes of the purchased Aroclor 1232 and 1268 standard solutions and therefore has each Aroclor at 500µg/mL.

7.8. 1-Bromonitrobenzene (BNB) the first eluting internal standard, Aroclors 1016, 1221, 1232, 1242, 1248, and 1254 are quantified using its response.

7.9. 2,2',4,4',5,5'-Hexabromobiphenyl (HBBP) the second eluting internal standard. Aroclors 1260, 1262, and1268 are quantitated using its response.

7.10. Tetrachloro-m-xylene (TMCX) - the surrogate (CAS # 877-09-8) purchased as a neat compound.

7.11. 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (DCBP) - the surrogate (CAS # 2051-24-3) purchased as a neat compound.

7.12. Internal Standard Stock Solution – Prepared by diluting the commercially prepared stocks 1000 µg/mL solutions of the internal standards BNB and HBBP in hexane.

7.13. Internal Standard Working Solution- Prepare an internal standard working standard (IS)with 8 µg/mL BNB and HBBP in hexane.

7.13.1. Each 0.1 mL aliquot of the sample extract undergoing analysis should be spiked with 1 µL of the IS Working Solution, resulting in a concentration of 80ng/mL BNB and HBBP (for example, when preparing a sample aliquot of 0.3ml, spike the extract with 3µL of the internal standard stock).

7.14. Surrogate Stock Standards- Prepared Stock 1000µg/mL solution of the surrogate standards TCMX and DCBP by dissolving 0.10g of each in a small amount of hexane in a 100mL volumetric flask and diluting to volume with hexane.

7.15. Surrogate spiking standard- Prepare a surrogate working standard with 2ug/mL TCMX and DCBP by diluting 0.08mL of the surrogate stock solutions with acetone.

7.16. Blank Spike (BS) Stock Standards – Typically, a 1000 µL/mL solution of Aroclor 1660 in Hexane is used to spike BS and MS samples. The spike is purchased as a commercially certified working solution and diluted to volume with acetone.

7.17. BS Spike Working Standard contains Aroclor 1660 at 80µg/mL. Prepare the standard by adding 0.8mL of the BS Spike Stock Standard and dilute to volume with hexane.

7.18. MRL spike working standards made from certified solutions are used to prepare MRL spikes. Aroclor 1660 is used in the preparation of the MRL spike.

7.19. Calibration working standards Prepared as outlined in Section 10.

7.20. The SCV must be derived from a different manufacturer than the stock standard used to prepare the calibration curve.

7.20.1. Two sources from different manufacturers are obtained when feasible or at least two different lot numbers from the same manufacturer.

7.20.2. Standards produced by two different manufacturers may be purchased from the same vendor.

8. Sample Collection, Preservation, Shipment, Storage, Holding times and Disposal.

8.1. Samples must be collected in an appropriate container, transported to ARI and stored under custody at >0 to 6 ºC.

8.2. Samples must be stored at ARI, at >0 to 6 ºC until final disposal.

8.2.1. Samples must be extracted with holding times determined from the day of sampling. The standard holding time for water samples is 7 days. The standard holding time for solid samples is 14 days.

8.2.2. A longer holding time may be appropriate if it can be demonstrated that the reported analyte concentrations are not adversely affected from preservation, storage and analyses performed outside the recommended holding times.

8.2.3. Solid and sediment samples may be stored frozen at -10 to -20 ºC to extend the holding

time to one year.

8.2.4. Water samples being analyzed under the MTCA program stored at >0 to 6 ºC have an extended holding time of one year

8.3. Extracts

8.3.1. Extracts are delivered to Refrigerator 15 in the instrument laboratory by extractions technicians.

8.3.2. Analysts in the instrument lab assume custody of the sample extracts and then move them into Refrigerator 17 and place them in a bin assigned in Element.

8.3.3. Extracts must be stored at >0 to 6 °C and protected from light.

8.3.4. Extracts must be analyzed within 40 days of extraction except for MTCA waters which have an extract holding time of one year.

8.3.5. Extracts must be stored in their assigned Element bin.

8.3.6. Extracts may be disposed 40 days after the analysis has been completed and the Element bin will be recycled for future use.

8.3.7. Extracts will be disposed in the large blue barrel in the satellite accumulation area designed for extract vials.

9. Quality Control

9.1. Quality control requirements are available in the table in Appendix 20.1.

9.1.1. Criteria for ARI's routine analyses are listed in Appendix 20.1

9.1.2. When DoD-QSM acceptance criteria are required, please refer to DoD-QSM 5.1 for further guidance.

9.2. ARI routinely checks the effect of the matrix on both method precision and bias. At a minimum, this check should include the analysis of at least one matrix spike and one duplicate unspiked sample, or one MS/MSD pair with each preparation batch of up to 20 samples of the same matrix.

9.2.1. ARI will not perform MS/MSD analysis on any of the field QC samples delivered as part of a client's QA/QC program (water rinsate samples, field/trip blanks etc.)

9.2.2. Dilution of MS/MSD extracts to get either spiked compounds or native analytes on scale is not necessary.

9.3. Statistical Control- Internal quality control limits for analyte spike and surrogate recoveries and relative percent difference for matrix spike and matrix spike duplicates are statistically generated on a periodic basis.

9.3.1. These quality control limits are provided to bench chemists, managers, and QA staff as tools for assessing data quality in real-time at the point of data generation.

9.3.2. Practical considerations relating to their dynamic nature require their presentation in a document separate from this SOP. Current control limits are listed in Element.

9.3.3. All analysts using this SOP must use it in conjunction with the Control Limit documentation in Element to assess data quality and any possible need for corrective actions.

9.4. Method performance must be re-evaluated every time there is a change in instrument type, personnel or method. Method performance will be demonstrated using the Demonstration of Capability (DOC) procedure described in ARI SOP 1017S. A certification statement and all raw data from the DOC will be forwarded to QA for approval and archive. Each DOC must be documented in SharePoint.

9.5. Each reagent and standard preparation is recorded in Element standard registry and assigned a unique identification for traceability to the certificate of analysis of the source chemical. See ARI SOP 1013S for details.

10. Calibration and Standardization (Calibration criteria and verification apply to both chromatographic columns)

10.1. ARI uses single injection dual column GC-ECD systems for analysis of Aroclors. Analysis must not proceed until both columns meet initial calibration criteria.

10.2. The Aroclor 1660 mixture contains many of the congeners present in other Aroclors, an acceptable calibration performed with this Aroclor mixture serves to demonstrate the linearity of the detector for the other Aroclors.

10.3. Prepare six calibration solutions by diluting the stock of the 1660 calibration solution described in Sections 7.1 through 7.4 as outlined in Table 03.

Table 03 - Calibration Standard Concentration

Stock Calibration Dilution		1X	2X	4X	10X	20X	50X
Used for:		ICAL	ICAL	ICAL ICV CCV	ICAL	ICAL	ICAL
Aroclor	Component	Calibration Standard Concentration (ng/mL)					
1660	1016	1000	500	250	100	50	20
	1260	1000	500	250	100	50	20
2162	1221	-	-	250[1]	-	-	-
	1262	-	-	250[1]	-	-	-
3268	1232	-	-	250[1]	-	-	-
	1268	-	-	250[1]	-	-	-
1242	1242	-	-	250[1]	-	-	-
1248	1248	-	-	250[1]	-	-	-

Table 03 - Calibration Standard Concentration							
Stock Calibration Dilution		1X	2X	4X	10X	20X	50X
Used for:		ICAL	ICAL	ICAL ICV CCV	ICAL	ICAL	ICAL
Aroclor	Component	Calibration Standard Concentration (ng/mL)					
1254	1254	-	-	250[1]	-	-	-

1) Working standards prepared at 250ng/ml do not require dilution.

10.4. Add surrogate standards to the calibration working solutions so that the final concentration of each surrogate is 40ng/mL.

10.5. Spike each calibration solution with 1µL Internal Standard solution per 100µL of each standard.

10.6. Analyze each calibration solution using the same conditions and instrument setting to be used for sample extract analyzes.

10.7. For each Aroclor, select 3 or more characteristic peaks on each column to represent that Aroclor. The area of selected peaks should be ≥ 25% of the area of the largest Aroclor peak. An effort should be made to make sure that the peaks selected for quantitation in one Aroclor are not used for quantitation in other Aroclors.

10.8. Calculate the Relative Response Factor (RRF) for each Aroclor peak selected in Section 10.7 using the following formula:

$RRF = (A_X C_{IS}) / (A_{IS} C_X)$
where:
A_X = Peak area for the quantitation peak being measured
A_{IS} = Peak area of the internal standard
C_{IS} = Concentration of the IS associated with the peak
C_X = Concentration of the analyte

10.9. Calculate the Average RRF for each peak.

$\text{Average RRF} = \Sigma RRF_i / n$
where:
RRF_i = the peak response factor for each quantitation peak in the calibration standard
N = the total number of standards (usually 5)

10.10. Calculate the Relative Standard Deviation (RSD) for each peak. (These calculations are

normally performed by the chromatographic data system).

$$\textbf{RSD = SD / (Ave RRF) = } \left(\left(\Sigma \left(RRF_i - \text{Ave RRF}\right)^2\right) / (n-1)\right)^{1/2}$$

10.11. When the average RSD for each compound is ≤ 20%, the calibration is acceptable and the average RRF is used to calculate analyte concentration.

10.12. When the %RSD for any Aroclor peak is not ≤ 20% the analyst will:

10.12.1. Determine that there is no detector or chromatographic peak saturation and that the chromatographic system is functioning properly, then:

10.12.2. Use a linear or quadratic regression to calibrate for the Aroclor.

10.12.2.1. The analyst will first attempt to use a linear fit requiring at least five calibration points.

10.12.2.2. Next, a Quadratic non-linear calibration requires six calibration points may be used.

10.12.3. See EPA Method 8000C Section 11 for reference to linear or quadratic regression calibration.

10.12.4. When specifically required by a project or QAP, the other Aroclors may be curved along with or in lieu of Aroclor 1660.

10.12.5. The DoD-QSM requires that all Aroclors be quantified using a five-point calibration curve for each specific Aroclor quantified in a sample.

10.13. The average RSD for the quantitation peaks for each Aroclor must be less than or equal to 20% for the initial calibration to be valid. Quantitation is performed using the average RRF from the initial calibration. Surrogates may use the linear calibration model discussed in Section 11.5 of Method 8000C so long as the coefficient of determination is greater than 0.99.

10.14. Retention time windows- Retention times for each analytical batch are established by the first calibration verification in each analytical sequence.

10.14.1. ARI uses a default retention time window width of ± 0.05 minutes. Retention time studies suggested by the method often result in windows of 0.01 minutes or less.

10.14.2. ARI's experience indicates that allowing the chromatographic data system to identify analytes based on narrow statistically derived retention times may lead to false negative results. This happens often when analyzing extracts from difficult matrices that contained oily material or high background contamination. For this reason, ARI sets retention time windows to ±0.05 minutes and requires the analyst to manually screen for and eliminate resulting false positives.

10.14.3. Retention time criteria may change during an analytical sequence if the RT shift is

explainable (a column was shortened and all RT shift equally) and CCVs confirm that the calibration is valid. All such deviations must be explained on the Analyst Notes form.

10.15. The instrument initial calibration (ICAL) must be verified prior to use by analysis of a second source calibration verification standard (SCV).

10.15.1. The SCV standard is prepared at the same concentration as the mid-point ICAL standard as noted in Table 3.

10.15.2. Analyze the SCV using the same conditions as the initial calibration.

10.15.3. The SCV must be derived from a different manufacturer than the stock standard used to prepare the calibration curve.

10.15.3.1. Two sources from different manufacturers are obtained when feasible or at the very least two different lot numbers from the same manufacturer.

10.15.3.2. Standards produced by two different manufacturers may be purchased from the same vendor.

10.15.4. Calculate the percent difference using the formula:

%D = 100(Conc – Concmp) / Concmp
where:
Concc = the quantitated concentration in the CVS
Concmp = the concentration of the midpoint in the ICal (500)

10.16. Initial and Continuing Calibration Verification (ICV/CCV): The performance of the instrument over time is monitored by analyzing initial and continuing calibration verifications.

10.16.1. The ICV/CCV standards are prepared from the same source as the ICAL standards. ICV/CCV standards are analyzed at the concentration of the mid-point ICAL standard (250ng/ml).

10.16.2. Each set of ICV/CCV analyses should include an Aroclor 1660 standard and one other Aroclor standard (1242, 1248 or 1254) on a rotating basis. When requested, ARI may vary the concentration of ICV/CCVs to include several standards from the calibration range or use different Aroclor pairs in the ICV/CCV sets.

10.16.3. The ICV/CCV standards are prepared from the same source as the ICAL standards. CCV standards are analyzed at the midpoint ICAL concentration as noted in Table 3.

10.16.4. An ICV is analyzed at the beginning of the analytical bracket and CCVs must be analyzed at the end of an analytical bracket.

10.16.5. A CCV pair must be analyzed after every 10 field samples.

10.16.6. No more than 12 hours may pass between ICV/CCVs.

10.16.7. The retention times of all analytes in all daily ICV/CCVs must fall within the retention time windows established during initial calibration.

10.16.8. The Aroclors in the ICV/CCVs are quantified using the average response of 3 to 5 representative PCB congener peaks.

10.16.9. Calculate the RRF for each group of peaks in the ICV/CCV using the formulae used for the ICAL.

10.16.10. Calculate the %D between the CCV RRF and the average ICAL RRF.

10.16.11. Each ICV/CCV must have an average concentration of these peaks within ±20% of the true value when quantified using the ICAL.

10.16.12. All peaks used for quantitation should be at least 25% in height when compared to the height of the largest aroclor peak.

10.16.13. A minimum of three quantitated peaks need to be included to average an Aroclor and determine its percent difference from the ICAL.

11. Procedure

11.1. Prior to using this method, the samples must be prepared for chromatography using the appropriate sample preparation and cleanup methods.

11.2. Examine the project requirements in Element for each Work order.

11.2.1. Work order documents and the project version may contain information affecting the analysis such as unusual analytes, control limits, project specific MRL standard requests, and project required data quality objectives.

11.2.2. Organic extraction documents may contain useful sample or extract specific information and may include screening to which may be used to adjust extract concentration prior to analysis.

11.3. The recommended GC operating conditions are as follows (samples must be run using the same instrument conditions as the initial calibration.)

Initial temperature:	160°C, hold for 1 minute
Temperature program:	160-310°C at 15C°/min
Final temperature:	310°C, hold for 4 minutes
Injector temperature:	220°C
Detector temperatures:	330°C
Detector make-up gas flows	40 mL/min (front) and 35 mL/min (back)
Column initial flow	3.6 mL/min (hold for 12 minutes)

Column flow ramp	3.6-5 mL/min at 1 mL/min
Column flow final hold	5 minutes at 5 mL/min
Injector:	Grob-type, splitless/split
Injector Pulse	20 psi at 0.45 minutes
Split flow	20 mL/min at 0.5 minutes
Sample volume:	2 µL
Carrier gas:	Helium at 30cm/sec.

11.4. Prior to sample analysis the GC system must have an acceptable initial calibration curve (the requirements for the calibration curve are found in Section 10)

11.5. Prior to sample analysis an initial calibration verification must be analyzed and this ICV must meet the criteria found in Section 10.11. If time remains in the 12-hour QC period begun with the initial calibration, the mid-point calibration standard from the initial calibration may be used as the CCV provided it meets the requirements found in Section 10.11.

11.5.1. Rinses before CCVs are not allowed unless rinses are placed before all injections in the analytical sequence.

11.6. Screen extracts as necessary

11.6.1. It is highly recommended that the extract be screened on a GC/ECD using the same type of capillary column. This will minimize contamination of the GC system from unexpectedly high concentrations of organic compounds and may show high background samples that should be analyzed using a medium/high level extraction. If the screening chromatograms indicate the presence of elemental sulfur, remove the sulfur using elemental Mercury as described in Appendix 20.3.

11.7. Remove sample extracts from refrigerator 15 and change the location to refrigerator 17 in Element under batch or sequence.

11.8. GC analysis

11.8.1. Measure a 0.3-0.5ml aliquot of the sample extract obtained from sample preparation. Use a 10µL syringe to add 1µL of Internal Standard spiking solution for each 0.1mL of extract. This results in a concentration of 80ng/µL of each internal standard in the extract. This aliquot should be prepared in a clear glass auto-sampler vial and sealed with a crimp cap. Store the remaining extract volume at >0 to 6°C, protected from light in screw-cap vials equipped with unpierced Teflon lined septa.

11.8.2. Load autosampler with the aliquots prepared in Section 11.8.1.

11.8.3. Enter the analytical sequence into the chromatography data system.

11.8.4. Begin the analytical sequence.

11.8.5. The injection volume must be the same volume used for the calibration standards. Recommended GC operating conditions are specified in Section 11.3.

11.8.6. The computer system will collect and process the chromatography data and export it to "Target" software.

11.8.7. The "Target" software assigns the chromatographic baseline and integrates the electronic signal producing a chromatogram.

11.8.8. Examine the chromatogram for the presence of elemental sulfur.

11.8.8.1. If the presence of sulfur is suspected a Mercury cleanup must be performed on the affected extract and all associated QA sample extracts. The clean-up procedure is outlined in Appendix 20.3. Following clean-up, the sample extracts must be re-analyzed starting at Section 11.8.2.

11.8.9. Verify that the computer has correctly identified the chromatographic baseline and integrated all peaks correctly.

11.8.9.1. If corrections are required, manually re-integrate the data file following guidelines in SOP 1021S "Manual Integration of Chromatographic Peaks".

11.8.9.2. Manual integrations must be identified and explained in the reviewer checklist associated with each analytical sequence loaded into Element.

11.8.9.3. The final raw data report includes a before manual integration chromatogram and an after manual integration chromatogram for all manual integrations performed. This manual integration report is attached to the data file .PDF.

11.8.10. Perform all qualitative and quantitative measurements as described in Section 12.

11.8.11. Replace the punctured septum on the auto-sampler vial with a new one.

11.8.12. Store the extracts at >0 to 6°C, protected from light in Refrigerator 17.

11.8.13. Following the data analysis, upload the data into Element using data tool.

11.8.14. Attach PDF's of all bracketing CCVs, raw data for all the samples and associated QC, the ELEMENT report, and an analyst's note form in the project folder.

11.8.15. Attach a .pdf of the virtual logbook to the sequence associated with the data.

11.8.15.1. Make sure the Reviewer Checklist(s) include all deviations from standard procedure and any other noteworthy information concerning the project analyzes.

12. Data Analysis and Calculations

12.1. Aroclor Identification- A sample is tentatively determined to have Aroclor content when the Aroclor peaks fall within the retention time windows for the Aroclor peaks that are used to

calibrate the Aroclor and the pattern ratios are consistent with one or more of the Aroclor standards.

12.1.1. The Aroclor detection must be confirmed by examining the data from the second analytical column. Should the second column also show detection of Aroclor peaks within the RT windows, the hit has been confirmed.

12.1.2. Choose the Aroclor standard whose pattern most closely resembles that of the sample chromatogram. Carefully examine the patterns on both columns.

12.1.3. When samples appear to contain weathered PCBs, treated PCBs, or mixtures of various Aroclors, use of Aroclor standards may not be straightforward (or technically appropriate). In such cases, the analyst must decide which Aroclor or Aroclors most closely represent the range of PCBs present and will quantify total PCBs by quantifying and averaging those congener peaks with the most consistent ratios based on the analyst's opinion. When samples appear to contain multiple Aroclors, the analyst should attempt to quantify the individual Aroclors using peaks that are unique to each Aroclor or are significantly larger in one of the Aroclors. Weathered patterns and difficult mixtures should be noted in the Analyst Notes report. The analyst should also attempt to report the total PCB content as accurately as possible and avoid "double counting" of Aroclors.

12.1.4. All Aroclor peaks should show consistent RT shifting in comparison to the initial calibration (i.e. all peaks should elute earlier or later compared to the initial calibration, and by the same amount.) Large chromatographic interferences may cause inconsistent shifting by moving some of the peaks more than others. The chromatographs of samples should be examined to ensure that false negatives aren't created by this manner of chromatographic overload.

12.2. All peaks for each Aroclor should show quantitative agreement. Again, interferences can elevate the quantitation number for some of the peaks. Analysts are expected to average the peaks that best represent a given Aroclor in a specific chromatogram. Should some of the quantitation peaks be interfered with, these peaks may be removed from the average Aroclor concentration calculation, so long as at least three peaks remain for averaging. The peaks removed from the calculation, as well as the corrected average concentration need to be noted on the raw data.

12.3. Sample Quantitiation (Calculation performed by Target and verified with Element software)

12.3.1. Water

Concentration (µg/L) =	$\frac{(Ax)(Is)(Vt)(DF)}{(Ais)(RRF)(Vo)(Vi)}$
where:	

A_X = Peak of the quantitation peak for the compound being measured
Is = Amount of internal standard injected (ng).
Vt = Volume of total extract
A_{IS} = Peak area of the internal standard
RRF = Relative response factor for compound being measured
C_X = Concentration of the analyte
Vo = Volume of water extracted (ml)
Vi = Volume of extract injected (ul)
DF = Sample Dilution Factor (1 for undiluted samples)

12.3.2. Sediment/Soil/Sludge (on a dry weight basis) and Waste (normally on a wet weight basis)

Concentration (µg/kg) =	$\frac{(Ax)(Is)(Vt)(DF)}{(Ais)(RRF)(Vi)(Ws)(D)}$
where:	
A_X = Peak of the quantitation peak for the compound being measured	
Is = Amount of internal standard injected (ng).	
Vt = Volume of total extract	
DF = Sample Dilution Factor (1 for undiluted samples)	
A_{IS} = Peak area of the internal standard	
RRF = Relative response factor for compound being measured	
Vi = Volume of extract injected (ul)	
Ws = Weight of sample extracted or diluted in grams	
D = % Dry weight of sample = 1.0 on an as received basis	

12.4. ARI will report the higher of the Aroclor results as per Method 8000B. This approach is conservative relative to protection of the environment. In certain instances, or for project specific requirements, it may be appropriate to report the lower result as per Method 8000C. This approach is only valid under the discretion of an experienced analyst and must be noted in the analyst's notes and in the project narrative.

13. Method Performance

13.1. The QA department measures method performance using a combination of quarterly MRL studies, performance evaluation samples, and the monitoring of surrogate and spike recoveries.

13.1.1. Detection limits- the LOD for all analytes quantitated using this SOP are set using the low point of the initial calibration curve and validated by MRL studies.

13.1.2. MRL studies are performed each quarter for each analyte by each preparatory and analytical method.

13.1.3. LOD and MRL values may be found for each analyte on the ARI's Web Site

13.2. Laboratory precision and bias measurements are performed by monitoring surrogate and spike recoveries in samples and quality control samples.

13.2.1. Control limits are calculated from these recoveries.

13.2.2. These control limits are disseminated to the bench chemists and Element administrator for use in monitoring method performance in real time.

13.2.3. As these limits are updated regularly, their dynamic nature prevents their inclusion in this SOP. However, they may be found on the ARI's Web Site.

13.3. Method performance must be re-evaluated every time there is a change in instrument type, personnel or method. See ARI SOP 1017S.

13.4. This method should be performed only by experienced GC analysts, or under the close supervision of such analysts.

13.5. Aroclors are multi-component mixtures. When samples contain more than one Aroclor, a higher level of analyst expertise is required to assure proper qualitative and quantitative analysis. The same is true of Aroclors that have been subjected to environmental degradation (weathering) or degradation by treatment technologies. Such weathered multi-component mixtures may have significant differences in peak patterns compared to those of Aroclor standards. In these cases, PCB peak analysis may be more appropriate.

13.6. **The experience of the analyst must weigh heavily in the interpretation of the chromatogram**. In the case of multi-component analytes such as Aroclors the analyst should rely primarily on pattern recognition.

14. Pollution Prevention

14.1. All syringe rinses are discharged into activated charcoal. Spent charcoal is properly disposed of as "Solvent Contaminated Solids" by ARI's designated Treatment, Storage and Disposal Facility.

14.2. Charcoal containers must remain covered when not attended to prevent fugitive vapors.

14.3. Disposed expired standards into the designated barrel in the hazardous waste room.

14.4. Auto-sampler vials containing sample extracts are placed in the satellite accumulation station in the GC store room for eventual removal by an EPA approved Treatment, Storage and Disposal Facility.

14.5. All GC split vents are connected to an exhaust vent and the filter is changed biannually.

14.6. Open solvent containers should only be present when actively preparing samples.

14.7. Wherever possible the final sample extract volume should be as small as possible to minimize the generation of waste.

15. Data Assessment and Acceptance Criteria for Quality Control Measures

15.1. Requirements relating to initial and continuing calibration are detailed in Section 10 and Appendix 20.1 of this document.

15.2. Requirements for Method Blanks are tabulated in Appendix 20.1.

15.3. Internal Standards- All samples' internal standard peak areas must meet the technical acceptance criteria listed in Appendix 20.1 of this SOP.

15.4. Surrogate Recoveries

15.4.1. All method blanks, blank spikes, matrix spikes, matrix spike duplicates, duplicates, or other samples must have acceptable surrogate standard recoveries. Surrogate recoveries are acceptable when they are within ARI's statistically generated control limits or limits set by ARI's client or a specific quality systems protocol such as the DoD-QSM.

15.4.2. Any surrogate recovery that is "out-of-control" required that a corrective action be initiated.

15.4.2.1. These requirements do not apply to subsequent dilutions of samples where a prior analysis of the diluted sample extract shows acceptable surrogate recovery.

15.4.2.2. When mandated by contract-specific requirements, corrective actions must be performed for unacceptable surrogate recovery even when the criteria are labeled as advisory in the reference method.

15.4.3. Surrogate acceptance criteria are both matrix and concentration level specific (e.g. low level vs. medium level soils). When analyzing matrices or concentration levels for which no acceptance criteria are available, the closest approximation of available acceptance criteria may be provided as estimates for advisory purposes only.

15.5. Blank spikes (BS)

15.5.1. Blank Spike recovery must fall within specified recovery acceptance limits or corrective action is required.

15.5.1.1. Blank Spike recovery acceptance criteria are determined statistically from historic laboratory data. Criteria specified by a method, ARI's client or a particular quality system (i.e. DoD-QSM) may supersede ARI's historic values.

15.5.1.2. When mandated by a particular quality system or contract-specific requirements, corrective actions is required in response to unacceptable BS criteria, even when the criteria are labeled as advisory in the reference method.

15.5.1.3. Spike acceptance criteria are method, matrix and concentration level specific

(e.g. low level vs. medium level soils). When analyzing matrices or concentration levels for which no specific acceptance criteria are available, the closest approximation of available acceptance criteria may be used for advisory purposes only.

15.5.2. When an BSD is analyzed, relative percent difference (RPD) acceptance limits also apply, if specified by contract or quality system.

15.5.3. The RPD between spiked Aroclor concentrations in an BS and an BSD should be ≤ 30%. If the RPD exceed 30%, examine the surrogate recovery of the BS/BSD. Since the surrogate is a measure of extraction efficiency, if the RPD between the surrogate recoveries of the BS/BSD is ≤ 30% then no corrective action is necessary. If the surrogate RPD also exceeds 30%, submit the BS and all associated samples for re-extraction and reanalysis.

15.6. Matrix Spike/Matrix Spike Duplicates (MS/MSD)

15.6.1.1. MS spike recovery must fall within specified recovery acceptance limits or corrective action is required.

15.6.1.2. MS recovery acceptance criteria are determined statistically from historic laboratory data. Criteria specified by a method, ARI's client or a particular quality system (i.e. DoD-QSM) may supersede ARI's historic values.

15.6.1.3. When mandated by a particular quality system or contract-specific requirements, corrective actions is required in response to unacceptable MS criteria, even when the criteria are labeled as advisory in the reference method.

15.6.1.4. Spike acceptance criteria are method, matrix and concentration level specific (e.g. low level vs. medium level soils). When analyzing matrices or concentration levels for which no specific acceptance criteria are available, the closest approximation of available acceptance criteria may be used for advisory purposes only.

15.6.2. When an MSD is analyzed, relative percent difference (RPD) acceptance limits also apply, if specified by contract or quality system.

15.6.2.1. The RPD between spiked Aroclor concentrations in an MS / MSD must be ≤ 30%. If the RPD exceed 30%, examine the surrogate recovery of the MS/MSD. Since the surrogate is a measure of extraction efficiency, if the RPD between the surrogate recoveries of the MS/MSD is ≤ 30% then no corrective action is necessary. If the surrogate RPD also exceeds 30%, submit the BS and all associated samples for re-extraction and reanalysis.

15.7. Holding Times

15.7.1. Extracts should be analyzed within the extract holding time (40 days from the date of extraction.)

15.7.2. If re-extraction due to an out of control event requires that samples be re-extracted after

their extraction holding time has elapsed (seven days for water and fourteen days for tissues/solids) the analyst should analyze and report both extraction sets, whenever practical, distinguishing between the initial extraction and re-extraction on all deliverables. This will document that the samples were originally extracted within holding times and may allow for comparisons that will determine whether data quality was affected by the samples being analyzed out of holding.

15.7.3. If any extracts are analyzed after the 40-day extract holding time has elapsed, the analyst shall document this in the analytical notes accompanying the data so that it may be included in the narrative.

15.8. Analytical sequences

15.8.1. For GC and GCMS analysis; Analysts should not intersperse instrument blanks between samples and closing calibrations or method blanks. If instrument blanks are run between samples and QC samples or standards, then every sample in the job or the bracket must be preceded by an instrument blank. Also, QC samples should be run with their associated samples and; specifically, running all method and spike blanks at the beginning of an analytical queue prior to samples is strongly discouraged.

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16. Corrective Actions for Out of Control Events

16.1. Corrective actions may include any, but are not limited to, the following:

16.1.1. Narration – the failure and the extent of the failure (i.e. the percent deviation from the expected value) will be described in the analyst notes.

16.1.2. Reevaluation – the data will be reconsidered by the analyst and then the analyst will corroborate with a peer analyst or supervisor to confirm or revise the initial evaluation.

16.1.3. Repreparation – the remaining unanalyzed aliquot of the extract is transferred to a new vial and analyzed.

16.1.4. Reanalysis – the extract aliquot that was originally prepared is reinjected and run on the gas chromatograph again.

16.1.5. Reextraction – a reextraction request is filled out (Form 0030F). PDF Copies of the form are provided to the extractions department, the project manager, the QA manager and the lab manager. The remaining sample is extracted.

16.1.6. Instrument Maintenance – this will vary with the problem experienced and the analyst's experience and a description of the maintenance performed will be documented in Element.

16.1.7. Recalibration – a new initial calibration is evaluated, and the associated samples

reanalyzed.

16.1.8. Revised data submission – if it is determined through reevaluation or reanalysis that an error was made and subsequently corrected then the data will be resubmitted with the appropriate corrections and explanation for data review. Both the original and finalized data will be provided for data review.

16.1.9. Formal corrective action entry – formal corrective actions are entered into the ARI database, when an out of control event cannot be remedied through the above corrective action process.

16.2. When an Initial Calibration (ICAL) RSD for an analyte exceeds 20%

16.2.1. Examine the initial calibration analyses. Proceed with any appropriate corrective action from 17.1, based on analyst discretion.

16.2.1.1. When the failure appears to be the result of an improperly prepared calibration standard, re-prepare the standard and reanalyze it. Reanalyzing or replacing a single standard must NOT be confused with the practice of discarding individual calibration results for specific target compounds to pick and choose a set of results that will meet the RSD or correlation criteria for the linear model. The practice of discarding individual calibration results is addressed as a fourth alternative option, and is very specific as to how a set of results are chosen to be discarded. If a standard is reanalyzed, or a new standard is analyzed, then ALL the results from the original analysis of the standard in question must be discarded. Further, the practice of running additional standards at other concentrations and then picking only those results that meet the calibration acceptance criteria is EXPRESSLY PROHIBITED, since the analyst has generated data that demonstrate that the linear model does not apply to all the data.

16.3. When an Initial or Continuing Calibration Verification (ICV/CCV) %D exceeds 20%

16.3.1. At the discretion of the analyst, a second ICV may be run after the failing ICV. If the second ICV meets all ICV criteria, then the sequence may begin.

16.3.2. If the second injection of the ICV fails, perform the appropriate corrective action(s) from section 16.1 and re-calibrate the instrument

16.3.3. DoD-QSM requires that %D for all analytes in both the ICV and CCV be ≤ 20%. For DoD analyses immediately analyze two consecutive ICVs or CCVs. This is not required; the analyst may default to Section 16.3.1.

16.3.3.1. When both ICVs/CCVs meet acceptance criteria, samples analyzed since the last acceptable CCV may be reported and the analytical sequence continued

16.3.3.2. If either fails or two consecutive ICVs/CCVs cannot be run, perform corrective actions and repeat the analytical sequence.

16.4. Internal Standards

16.4.1. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.4.2. If the calculations were incorrect, correct the calculations and verify that the internal standard response met their acceptance criteria.

16.4.3. If the internal standard compound spiking solution was improperly prepared, concentrated, or degraded, re-prepare solutions and re-extract/reanalyze the samples.

16.4.4. If the instrument malfunctioned, correct the instrument problem and reanalyze the sample extract. If the instrument malfunction affected the calibration, recalibrate the instrument before reanalyzing the sample extract.

16.4.5. If the above actions do not correct the problem, then the problem may be due to a sample "matrix effect".

16.5. Surrogates

16.5.1. Examine the bench sheet to verify spiking levels are correct.

16.5.2. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.5.2.1. If the above actions do not correct the problem, then the problem may be due to a sample matrix effect.

16.6. Method Blanks- Corrective action for a method blank which fails acceptance criteria may involve re-extraction and reanalysis of all associated samples and/or "B" flagging of the associated sample data. Each occurrence will be evaluated on an individual basis upon consultation with the Project Manager, the client, the Laboratory Supervisor, and the Laboratory Manager. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.7. Blank spike/Blank spike duplicate Samples

16.7.1. Control limits for this method and defined in Element for all PCB analysis. Verify that the correct and appropriate control limits have been applied. Blank spikes and blank spike duplicates that do not meet the control limits must not be used solely to reject data.

16.7.2. Examine the bench sheet to verify spiking levels are correct.

16.7.3. Proceed with any appropriate corrective action from 16.1, based on analyst discretion.

16.8. Matrix Spike/Matrix Spike Duplicates

16.8.1. Examine the bench sheet to verify spiking levels are correct.

16.8.2. Recoveries are advisory and should not necessarily result in re-extraction.

16.8.3. Proceed with any appropriate corrective action from 17.1, based on analyst discretion.

16.9. Sample Dilution- Should the quantitated value of any analyte exceed the working range of the curve; a dilution must be performed such that the analyte's quantitated value is within the curve range.

16.9.1. Additional internal standard must be added to the diluted extract to maintain the

required 80 ng/mL of each internal standard in the extracted volume.

16.9.2. All dilutions should keep the response of the major constituents in the upper half of the linear range of the curve.

16.9.3. When peaks from an analyte saturate the detector:

16.9.3.1. The analyst should analyze an Instrument Blank consisting of clean solvent until the system has been decontaminated.

16.10. In particular circumstances, the Project Manager (PM) may decide that meeting QC limits may be of relatively little significance when considered against other project issues, such as data usability and turn-around-time. Such a decision is particularly likely when continuing calibration responses are too high but there are no analytes identified in the samples (detection limits will not be compromised since response has improved). QC criteria specified in the work plan will be considered by the Project Manager.

16.10.1. The samples need not be re-analyzed if the PM so instructs the analyst. The analyst should have the PM initial all such decisions. It is preferable that the Client be consulted, but that decision is made by the PM. (See ARI Project Management SOP #005S)

16.10.2. All QC limit issues (including continuing calibration limits and all QC recovery limits) may be decided by the PM, the data reviewer, and/or GC Supervisor, preferably after consultation with the Client.

16.11. If contaminants (including target and non-target compounds) continue to cause significant interference, even after all relevant cleanups have been performed; the sample should be re-extracted at a level appropriate to the amount of contamination. The particular re-extraction level should be based on the initial analysis or pre-analysis GC-ECD screen. The experience and discretion of the analyst and section supervisor will be relied upon for re-extraction decisions. The PM will be notified if re-extraction at a different level is required.

17. Contingencies for Handling Out-of-Control or Unacceptable Data

17.1. See Section 16.2 for guidance on dealing with initial calibration out-of-control events.

17.2. See Section 16.3 for guidance on dealing with initial and continuing calibration verification out-of-control events.

17.3. See Section 16.4 for guidance on dealing with internal standard out-of-control events.

17.4. See Section 16.5 for guidance on dealing with surrogate out-of-control events.

17.5. See Section 16.6 for guidance on dealing with method blank related out-of-control events.

17.6. See Section 16.7 for guidance on dealing with blank spike and blank spike duplicate related out-of-control events.

17.7. See Section 16.8 for guidance on dealing with MS/MSD related out-of-control events.

17.8. See Section 16.9 for guidance on dealing with over range related out-of-control events.

17.9. See Section 16.10 for dealing with particular circumstances out-of-control events.

17.10. See Section 16.11 for dealing with out-of-control events concerning contamination.

18. Waste Management

18.1. All extract and standard vials must be disposed of by placing them in the blue hazardous waste drum in the lab set aside for this purpose. No vials may be thrown in the trash or receptacles not expressly designated for this purpose.

18.2. All solvents must be disposed of by pouring them out over charcoal. No solvent may be poured down the drain or disposed of in any other non-hygienic manner.

18.3. All spent charcoal must be disposed of by placing it in the charcoal disposal bin located in the hazardous waste room.

18.4. Waste must not be accumulated in the fume hoods and must be disposed of at the appropriate waste disposal location.

19. Method References

19.1. “Polychlorinated Biphenyls by Gas Chromatography”: Method 8082A, Test Methods for Evaluating Solid Waste (SW846), Revision 1, February 2007

19.2. EPA Method 608—Organochlorine Pesticides and PCBs

19.3. USEPA Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration Revision OLM03.1, August, 1994.

19.4. “Determinative Chromatographic Separations”: Method 8000C, Test Methods For Evaluating Solid Waste (SW-846), Revision 3, March, 2003.

19.5. Department of Defense Quality Systems Manual for Environmental Laboratories, Final Version 5.1, 2017

20. Appendices

20.1. Appendix 20.1: In-house PCB Quality Control Requirements

20.2. Appendix 20.2: Sulfur cleanup procedure

20.3. Appendix 20.3: Congener analysis by ECD

20.4. Appendix 20.4: Method 608 modifications

Appendix 20.1: PCB Quality Control Requirements

QC Requirement	Minimum Frequency	ARI Acceptance Criteria	Corrective Action (see Section 17)	Flagging Criteria
Demonstration of capability (DOC). DOC requirements are outlined in ARI SOP 1017S.	Prior to using any test method and at any time there is a significant change in instrument type, personnel, or test method.	ARI spike recovery QA limits	Recalculate results; locate and fix problem, then rerun demonstration for those analytes that did not meet criteria.	Not applicable (NA)
Method detection limit (MDL) study	At initial set-up and subsequently once per 12-month period; otherwise quarterly MDL verification checks shall be performed.	See 40 CFR 136B. MDL verification checks must produce a signal at least 3 times the instrument's noise level.	Run MDL verification check at higher level and set MDL higher or re-conduct MDL study.	NA
Retention time (RT) window width for each analyte and surrogate	At method set-up and after major maintenance (e.g., column change)	ARI uses a default retention time window of 0.05 minutes	NA	NA
Breakdown check (Endrin and DDT)	Run DDT's to check for possible DDT's in samples	NA	NA	Note possible DDT's in reviewer checklist
Minimum five-point Initial calibration for all analytes (ICAL)	Initial calibration prior to sample analysis	One of the options below: Option 1: RSD for each analyte ≤ 20% Option 2: non-linear regression: coefficient of determination (COD) r2 ≥ 0.99 (6 points required)	Correct problem then repeat initial calibration.	Flagging criteria are not appropriate.
Second source initial calibration verification	Once after each initial calibration	Value of second source for all analytes within ± 20% of expected value (initial source)	Correct problem and verify second source standard. Rerun second source verification. If that fails, correct problem and repeat initial calibration.	Flagging criteria are not appropriate.
Retention time window position established for each analyte and surrogate	Once per ICAL and at the beginning of the analytical shift	Position shall be set using the midpoint standard of the calibration curve or the value in the CCV run at the beginning of the analytical shift.	NA	NA
Retention time Window verification for each analyte and surrogate	Each calibration verification standard	Analyte within established window	Correct problem, then reanalyze all samples analyzed since the last acceptable retention time check. If they fail, redo ICAL and reset retention time window.	Flagging criteria are not appropriate for initial verification.

QC Requirement	Minimum Frequency	ARI Acceptance Criteria	Corrective Action (see Section 17)	Flagging Criteria
Calibration verification (initial [ICV] and continuing [CCV])	ICV: Daily, before sample analysis CCV: After every 10 field samples and at the end of the analysis sequence	All analytes within ± 20% of expected value from the ICAL	ICV: Correct problem, rerun ICV. If that fails, repeat initial calibration. See section 5.5.10 and box 55. CCV: Correct problem then repeat CCV and reanalyze all samples since last successful calibration verification.	ICV: Flagging criteria are not appropriate. CCV: Flagging criteria are not appropriate.
Method blank	One per preparatory batch	No analytes detected	Correct problem, if required re-prep then reanalyze method blank and all samples processed with the contaminated blank.	Apply B-qualifier to all results for the specific analyte(s) in all samples in the associated preparatory batch
Blank Spike (BS) containing all analytes and surrogates to be reported	One BS per preparatory batch	ARI BS control limits	Correct problem, then re-prep and reanalyze the BS and all samples in the associated preparatory batch, if sufficient sample material is available.	If corrective action fails and there is insufficient sample material; report and discuss in the case narrative.
Matrix spike (MS)	One MS per preparatory batch per matrix.	ARI MS control limits	Examine the project-specific DQOs. Contact the client as to additional measures to be taken.	For the specific analyte(s) in the MS sample, apply *-qualifier if acceptance criteria are not met.
Matrix spike duplicate (MSD) or sample duplicate	One per preparatory batch per matrix	ARI MS and %RPD control limits	Examine the project-specific DQOs. Contact the client as to additional measures to be taken.	For the specific analyte(s) in the MSD, apply *-qualifier if acceptance criteria are not met.
Surrogate spike	All field and QC samples	ARI control limits	For QC and field samples, correct problem then reprep and reanalyze all failed samples for failed surrogates in the associated preparatory batch, if sufficient sample material is available. If obvious chromatographic interference with surrogate is present, reanalysis may not be necessary.	For the specific analyte(s) in all field samples collected from the same site matrix as the parent, apply *-qualifier if acceptance criteria are not met.
Confirmation of positive results (second column or second detector)	All positive results must be confirmed.		NA	Apply p1-qualifier if RPD > 40%. Discuss in the case narrative.
Results reported between LOD and MRL	NA		NA	Apply J-qualifier to all results between LOD and MRL.

20.5. Mercury Clean-up

20.5.1. Elemental Sulfur is precipitated from the sample extract using elemental Mercury which forms the insoluble salt HgS.

20.5.2. This procedure is performed only when the presence of elemental sulfur is indicated in initial sample analyzes and is performed by GC analysts in addition to the Sulfur removal using TBAS performed in the Organic Extractions Laboratory following ARI SOP 334S “Sulfur Removal”.

20.5.3. Using a syringe insert a drop (~0.05 mL) of elemental Mercury into the autosampler vials containing the sulfur contaminated extract(s) and all associated QA sample extracts.

20.5.4. Shake the vials for approximately 30 seconds each using a “Vortex” type shaker.

20.5.5. Let the vial stand for 15 to 20 minutes to allow the precipitate to settle.

20.5.6. Repeat steps 20.2.3 through 20.2.5 until no additional dark precipitate is produced.

20.5.7. When the precipitate has settled, the vial may be placed in the autosampler tray for re-analysis.

20.5.8. Following analysis, dispose of the Mercury contaminated vial in the designated container in Fume Hood 34.

20.6. Appendix 20.3 - PCB Congeners by GC/ECD - ARI Method based on 8082A

20.6.1. This procedure summarizes ARI's protocol for identifying and quantifying specific Polychlorinated biphenyl congeners that in technical mixture compose PCB Aroclors. A variety of matrices may be analyzed including soils, solids, waters, tissues, and waste products (oils, sludges)

20.6.2. Congener analysis is recommended for samples containing multiple Aroclors that are indistinguishable from the patterns used in method 8082A

20.6.3. Detection limits-will depend on the amount of sample extracted and the final effective volume.

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20.6.5.

20.6.6. Compound identification is based on a dual column analysis.

20.6.7. The columns used are Restek STX CLP1 0.32mm ID x 30m x 0.32µm and STX CLP2 0.32mm ID x 30m x 0.25µm.

Appendix: 20.4 Modifications Required for EPA Method 608

20.4 Modification Required for EPA Method 608 (These modifications are only implemented when specifically requested by a client, otherwise Method 608 is analyzed as described in previously in this SOP)

20.4.1 The Initial Calibration for Method 608 is a minimum of 3 points instead of 5 the 5 required in
Method 8082A.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

ICP Analysis
Perkin Elmer DV
EPA SW-846 6010C
EPA 200.7

SOP 540S
Version 010.1

Revision Date: 2/23/17
Effective Date: 2/23/17

Prepared by:

Jenifer L. Bouldron/Jay Kuhn

Approvals:

Eric Larson, Inorganics Division Manager

David R. Mitchell, Quality Assurance Manager

Annual Review

SOP Number: 540S

Title: ICP Analysis Perkin Elmer DV EPA SW-846 6010 or EPA 200.7

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

1. Scope and Application

1.1. This SOP will cover the analysis of trace metals by inductively coupled plasma spectroscopy (ICP). This method is applicable to all matrix types including drinking water, groundwater, aqueous samples, TCLP and other extracts, industrial and solid wastes, sludges, sediments, and soils.

1.2. All samples, except filtered acid preserved groundwater and extracts plus drinking waters with a turbidity of <1 NTU, will be digested prior to analysis. See appropriate digestion and prep SOPs.

1.3. The procedures, with some modification, follow those given in SW-846 6010C, EPA 200.7, and EPA CLP 200.7M.

1.4. Table 8 lists all applicable elements with their corresponding wavelengths, linear concentration range, reporting limits, and if the element is viewed axial or radial.

1.5. The instruments used for this procedure will be a Perkin Elmer Optima 4300 dual view simultaneous ICP and a Perkin Elmer Optima 7300 dual view simultaneous ICP.

2. Summary of the Procedure

2.1. The Optima 4300DV and 7300DV are simultaneous ICPs with 2 segmented array charge coupled devices (SCD) detectors allowing the detection of numerous wavelengths. An autosampler allows for unattended operation of the ICP and for automated shutdown of the ICP. For each analytical run, the ICP is first calibrated, then QC solutions are checked. After the calibration and QC solutions are verified to be in control, samples are analyzed. Periodic maintenance, optimization of the ICP torch and optics will be described in detail. The biannual procedures for linear limit checks and IEC updates, and the quarterly MDL checks are also described.

2.2. Inductively coupled argon plasma spectrometry (ICP) is an analytical technique based on the measurement of atomic and ionic emission of trace elements by optical spectrometry. By employing a high energy excitation source, a radio-frequency inductively coupled argon plasma, efficient atomization and ionization are achieved. A peristaltic pump evens the flow of sample to the nebulizer, which forms an aerosol that is partially transported to the plasma where desolvation and excitation occur. Characteristic atomic and ionic line spectra are produced by this process. The spectra enter the spectrometer through an entrance slit, then are dispersed by a diffraction grating into separate lines directed to specific locations on the appropriate SCD. 2 SCDs cover wavelengths from 165 to 782nm. The Optima Dual View ICP is designed so that the plasma can be viewed in both axial and radial orientations, which improves detection limits (using axial view) while preserving the extensive linear range (using radial view) for which the ICP technique is known. This wide dynamic range allows for the measurement of concentrations

ranging from 1 ppb to 5000 ppm. Two analytical lines are used for sodium, allowing both a low detection limit and a higher linear limit, which would not be possible using a single analytical line. Background correction and inter-element correction factors are applied, as required, for each analytical line before the reading for each element is displayed and printed. The complexity of the emission spectra and background spectra requires extensive characterization research during the initial methods development period. Scandium is used as an internal standard to compensate for physical interferences: viscosity and surface tension effects in the uptake system, and plasma effects. The element chosen for the internal standard should be a non-analyte element and one which will not be present in the samples. The internal standard is added to all blanks, standards and samples using an on-line mixing block or a "T" between the peristaltic pump and nebulizer.

3. Definitions

3.1. ICP-OES: Inductively Coupled Argon Plasma - Optical Emission Spectrometry

3.2. ICP: ICP-OES abbreviated to ICP for this document.

3.3. IDL: Instrument Detection Limit. Three times the standard deviation of ten replicate measurements of a blank solution.

3.4. RL: Reporting Limit. The RL is the lowest value at which a given analyte is reported. The RL is based on the IDL, MDL, method efficiency, and analyst's judgment. The RL will, at minimum, equal the statistical MDL.

3.5. MDL: Method Detection Limit. As defined in CFR Appendix E Part 136; 3.14 times the standard deviation of seven replicate measurements of a low level standard or sample that has been digested.

3.6. CRDL: Contract Required Detection Limit. Contract specified minimum levels of detection.

3.7. ICV: Initial Calibration Verification. A second source standard analyzed immediately after calibration to verify the accuracy of the calibration.

3.8. CCV: Continuing Calibration Verification. A second source standard analyzed after every group of 10 samples and at the end of the day to verify calibration accuracy during the analytical run.

3.9. ICB: Initial Calibration Blank. A calibration blank analyzed immediately after the ICV to verify the baseline of the calibration.

3.10. CCB: Continuing Calibration Blank. A calibration blank analyzed immediately after every CCV to verify the baseline of the calibration.

3.11. Analytical Batch: An analytical batch will consist of no more than 20 samples.

3.12. MB: Method Blank. An aliquot of deionized water (Type I) taken through the sample

preparation procedure with each analytical batch.

3.13. MBSPK/LCS: Laboratory Control Sample. A reference sample of known concentration processed along with the analytical batch to test the digestion procedure for accuracy.

3.14. MS: Matrix Spike. A sample prepared by adding a known amount of analyte to a specified amount of sample matrix. Matrix spikes are used to determine the effect of the sample matrix on the method's recovery efficiency.

3.15. MSD: Matrix Spike Duplicate. A second replicate matrix spike sample prepared and analyzed as above (Sec.3.14) to measure precision with respect to a given matrix.

3.16. Duplicate: Matrix Duplicate. A second replicate matrix sample prepared and analyzed with a sample batch to measure the precision with respect to a given matrix.

3.17. ICSA, ICSAB: Interference Check Solutions. The ICSA solution contains interference elements, at levels often found in samples, to test the interelement correction factors (IEC). The ICSAB solution contains the same elements as the ICSA at the same concentrations plus analytes at moderate levels, to test the accuracy of analyte measurement in the presence of interferents.

3.18. CRI: Low Level Check Standard. This low level standard is at the RL.

3.19. Internal Standard. A non-analyte element added to all samples, blanks and standards, which is used to compensate for physical interferences, both in the uptake system and in the plasma.

3.20. SD: Standard Deviation

3.21. RSD: Relative Percent Standard Deviation. The SD divided by the mean, multiplied by 100.

3.22. RPD: Relative Percent Difference. The absolute difference between two numbers, divided by the average of the two numbers, multiplied by 100.

3.23. %R: Percent Spike Recovery. The difference between the matrix spike concentration and the background sample concentration, divided by the concentration of the spike added, multiplied by 100.

3.24. Carryover: The effect of a high level sample on a lower level sample which follows. Residual analyte from the high level sample may be remaining in the uptake lines, in the nebulizer, in the spray chamber or in the injector. A lower level sample which follows may show successively decreasing replicates (high SD or RSD). Carryover may also be referred to as a memory effect.

3.25. IEC: Inter-element Correction Factor. An empirically determined correction factor based on the spectral interference of another element at each analytical line.

3.26. Analysis Protocols:

3.26.1. Routine or Package: - Follows SW-846 6010C and EPA 200.7 If the analysis comment is Package (PKG), a data package will be generated from the Routine analytical run and the Routine QC samples. Other modifications that are necessary for certain quality

assurance plans and/or agencies will be detailed in individual sections.

3.26.2. CLP-Q - Follows Routine protocol with CLP-type and DOD QC standards analyzed at CLP QC frequency, in order to generate a CLP-type data package.

4. Interferences

4.1. Spectral Interferences:

4.1.1. Overlap of a spectral line from another element or molecular band spectra. This can be compensated for by using computer correction of raw data. This requires the monitoring and measurement of the interfering element(s). These corrections are set up using the IEC (Inter Element Correction) routine.

4.1.2. Background contributions from continuous or recombinant phenomena, and/or background contribution from stray light from the line emission of high concentration elements. This may require the selection of an alternative wavelength or selection of background correction adjacent to the analytical line.

4.1.3. Physical Interferences: Effects generally associated with sample nebulization and transport processes especially in samples which contain high dissolved solids and/or acid concentrations. The use of a peristaltic sample pump and a mass flow controller helps to minimize these effects. Internal Standard addition is used to monitor and compensate for moderate physical interferences.

5. Safety

5.1. The toxicity or carcinogenicity of each reagent used in this SOP is not been precisely defined. Treat each chemical compound as a potential health hazard. Reduce exposure to all chemicals to the lowest possible level by whatever means available.

5.2. Always wear appropriate PPE (personal protective equipment) when working in the Metals Preparation Laboratory. Gloves, safety glasses, ear protection, lab coats, respirators, face shields, etc. are provided for your protection

5.3. DO NOT attempt to cleanup acid spills in the laboratory. Immediately evacuate the area and contact a member of the Emergency Response Team (ERT).

5.4. Material Safety Data Sheets (MSDS) that outline hazards, exposure treatments and regulatory guidelines are available for all chemicals used in this procedure and should be consulted as the need may arise. The MSDS file is located in the central project management area. MSDS are also available online, at http//hazard.com/MSDS/.

5.5. Environmental Samples may contain hazardous waste; treat them as potential health hazards.

5.6. Dispose of all unwanted, broken glassware into a broken glassware disposal box. Inspect every piece of glassware. Do not use glassware that is chipped, cracked, etched, or scratched.

Glassware with minor damage should be set aside for repair.

5.7. Concentrated acids are very dangerous. Follow proper safety procedures according to the ARI Chemical Hygiene Plan. Always wear gloves, eye protection, and a lab coat.

5.8. All acid and sample waste must be disposed following the ARI Waste Management Plan.

6. Equipment and Supplies

6.1. Instrument – There are two Perkin Elmer Dual View ICP instruments an Optima 4300 and an Optima 7300. Both consists of a eschelle-based polychromator with a resolution of 0.006nm at 200nm, a solid state RF power generator, an axial and radial (dual view) inductively coupled argon plasma with shear gas, 2 SCD detectors, and a 190 or 200 position autosampler. The optical system is purged and thermostatted to minimize calibration drift. The main difference between the two instruments is that the Optima 7300 is equipped with and ESI Fast autosampler whereas the Optima 4300 has a standard XY Perkin Elmer AS93 autosampler.

6.2. Software – Optima 7300 WinLab 32 for ICP Version 5.1 with ESI SC Version 2.2.11.27. Optima 4300 WinLab 32 for ICP Version 4.02.0380.

6.3. Argon Supply - Argon is supplied from a liquid argon system of high purity argon (99.997% pure) with an110 psi operating pressure set at the regulator behind the instrument.

6.4. Consumables - Spare ICP parts are stocked in the lab to minimize downtime. Lab consumables include 13 X 100 mm polystyrene sample test tubes, Kimwipes, pipette tips, plastic beakers, Gelman IC syringe filters, polyethylene-only syringes (no rubber seals), 50 mL polyethylene centrifuge tubes, peristaltic pump tubing, tubing, tubing connectors and autosampler probes.

6.5. Labware

6.5.1. Glass volumetric flasks, class A

6.5.2. Glass volumetric pipettes, class A

6.5.3. Polypropylene volumetric flasks, class B

6.5.4. Adjustable pipettes covering the range: 5 µL to 10 mL

6.5.5. 5 mL reagent pipette

7. Reagents and Standards

7.1. Reagents

7.1.1. Trace grade concentrated nitric acid

7.1.2. Trace grade concentrated hydrochloric acid

7.1.3. Deionized water produced ARI's deionized water system. The deionized water system produces ASTM Type I reagent water (>18.3 megaohm). Monitoring of the deionized water quality is performed daily by conductivity, weekly on the ICP and approximately bimonthly

on the ICP-MS.

7.2. Standards: All standards must be labeled with the analyst's initials, preparation date, expiration date, and standard identification number (from the standard section of Element). The preparation of all standards and analytic solutions must be documented in the standard section of Element.

7.2.1. Calibration Standard Stocks: The four multiple element stocks are prepared based on chemical stability and on spectral compatibility. They are prepared from Inorganic Ventures ICP grade (at least 99.9% purity, ideally 99.999% purity) single element 10,000 mg/L stocks. Class A glass volumetric flasks and glass volumetric pipettes are used. Prepare each stock, as needed, using the volumes listed in Table 1. Note: for the Standard 4 stock, use a polypropylene volumetric flask and a Pipetman pipet.

7.2.2. Calibration Standards: The calibration stocks are diluted to working levels (Table 2) for the elements and the concentrations of each calibration standard on the first day of the work week. Polypropylene volumetric flasks are used for the calibration standards preparation. Four multiple element standards are prepared in a 5% hydrochloric acid and 5% nitric acid matrix. For standards 2, 3, and 4, use 2.0 mL of the appropriate stock in 100 mL final volume. For standard 5 use 4.0 mL of standard 5 stock in 100 mL final volume.

7.2.3. Calibration Blank: The ICP calibration blank is a solution of 5% hydrochloric acid and 5% nitric acid in DI water. The solution should be prepared as necessary and the flask should be labeled with the analyst's initials, preparation date and the standard identification number. This standard is also used as the ICB and CCB and for diluting samples.

7.2.4. CRI Solutions: The CRI Stock is prepared using the volumes and matrix listed in Table 3. The CRI solution (each analyte at the RL, except Na330) is a 1/2000 dilution of the CRI Stock.

7.2.5. Calibration Verification (CV) Solution: The Optima CV solution is prepared as needed using 2 multiple element, second source stocks: AR-ICPCV-2 and AR-ICPCV-5. These are diluted 1/100 in a 5% hydrochloric acid and 5% nitric acid matrix (see Table 5). The same solution is used for both the ICV and the CCV.

7.2.6. ICSA and ICSAB Solutions: The ICSAB stock and the ICSA solution are prepared using the volumes and matrix listed in Table 6. The ICSAB solution is prepared as the ICSA, with the addition of ICSAB stock and Sb 1000 mg/L using the volumes and matrix listed in Table 6.

7.2.7. Internal Standard Solution: The internal standard solution for the Optima 4300 is a 20 mg/L scandium standard, for the Optima 7300 it is a 10mg/L scandium standard. Use 2.0 or 1.0 mL of 10,000 mg/L scandium stock in a 1000 mL volumetric flask, in a 5% hydrochloric acid and 5% nitric acid matrix.

8. Sample Collection, Preservation, Shipment and Storage

8.1. All samples should be received in appropriate collection containers and have been properly preserved by the clients.

8.2. Samples are checked for proper preservative and stored refrigerated for a maximum of 180 days prior to sample preparation.

8.3. All samples received for dissolved metals analysis should be unpreserved at the time of receipt. They should be filtered through a 0.45µm filter prior to preservation.

8.4. All samples requiring preservation in the lab will be allowed to stand with refrigeration for a minimum of 24 hours after preservation before preparation and analysis is performed. In some instances, this may not be possible and the project manager and client will need to be notified.

8.5. Some samples are shared with the organic extractions and or conventionals laboratories. Sample receiving places these samples in a share bin in Refrigerator 5. SOP 1019S includes procedures for handling shared samples

9. Quality Control

9.1. Documentation

9.1.1. Instrument logbooks

9.1.1.1. ICP Sample logbook is used as a daily run sequence log and includes all solutions in an analytical run whether the data is reported or not. It also includes specific notes made by the analyst for that run. For example: notes on samples for dilutions or other issues, notes on QC samples and limits, and notes pertaining to instrument performance.

9.1.1.2. ICP Maintenance logbook contains notes on periodic checks of instrument performance (i.e. low intensities, high Internal Standard levels etc.) as well as all maintenance procedures.

9.1.2. ICP Files

9.1.2.1. Calibration. The daily calibration slopes printout is filed along with the Hg Profile results done prior to calibration (includes Hg line intensity, Drift, peak offset, and adjustment).

9.1.2.2. Interelement corrections/Linear limits. Contains the raw data and calculations for IEC adjustments and Linear Range checks.

9.1.2.3. IDL File. Contains raw and tabulated data for instrument detection limit determinations.

9.1.2.4. MDL File. Contains raw and tabulated data for Method detection limit determinations.

9.1.2.5. Standard Certificates. Contains current and previous Certifications for all Inorganic

Venture Standards as well QC Standards obtained from other sources.

9.1.2.6. Methods File. Contains all methods and method updates. (Also archived on the server computer.

9.2. Internal Standard. Scandium is used as an internal standard to compensate for physical interferences including viscosity and surface tension effects in the uptake system and plasma-loading effects due to high dissolved solids. The internal standard is added to all standards, blanks, and samples using an on-line mixing device (a mixing block or "T") between the peristaltic pump and nebulizer.

9.3. Calibration Standards. All standards are prepared weekly by dilution from known intermediates and verified by the analysis of certified QC standards obtained from an independent source (Section 9.3.3).

9.3.1. Calibration verification must be performed immediately after calibration with an Initial Calibration Verification Standard (ICV) and after every 10 samples and at the end of the analytical run with a Continuing Calibration Verification Standard (CCV). The ICV and CCV must be made from a source other than that used for the preparation of the standard curve and at a concentration different from the calibration standards.

9.3.2. Calibration Verification Blanks are analyzed to confirm the absence of blank contamination, baseline drift and/or carryover. Immediately after the ICV and after every CCV a Calibration Verification Blank (ICB/CCB) must be analyzed.

9.3.3. Independent QC Solutions. This standard is not required by the methodology but is used to check the calibration stock standard stability, concentrations and preparation. Typically, the elements are divided between two solutions for chemical stability. They are analyzed weekly, on the day new calibration standards are prepared.

9.4. A reporting limit standard (CRI) is analyzed following calibration verification for each element. The standard is used to verify the analytical performance of the instrument at the low end of the calibration or reporting limit.

9.5. Interference Check Solutions (ICSA/ICSAB). The interference check solutions, ICSA and ICSAB (see table 6), are analyzed to check the accuracy of commonly applied IECs. The ICSA solution contains aluminum, calcium, iron and magnesium (the common interfering elements) at high levels. The ICSAB contains these interfering elements at the same levels and 16 analytes at 1.0 mg/L. These solutions check the spectral interferences that are commonly present in environmental samples. These standards are analyzed after calibration verification.

9.6. Serial Dilution. A five-fold serial dilution (1/5 if the sample could be analyzed undiluted, 1/25 if the sample required 1/5 dilution) should be performed on any new or an unusual sample matrix. This dilution test will help identify if matrix interference is present. The dilution is

performed on a sample, typically the sample used for matrix QC, from each group of samples of a similar prep code for each sample digestion batch. The serial dilution should not be performed on a field blank or equipment blank. Some projects, including DOD, require a serial dilution be performed on at least one sample in their batch.

9.7. Post Digestion Spike. A post digestion spike should be performed on a new or an unusual sample matrix, along with the serial dilution (Section 9.6). This sample is intended to help identify matrix interference problems. Some projects, including DOD, require that a post-digestion spike be performed on at least one sample in their batch. The spike should be done on the same sample used for matrix QC within the batch. For CLP type samples this spike is required only for elements that are out of control in the Matrix Spike sample. For DOD type samples all requested elements must be spiked. For a post-digestion spike, an 8 mL aliquot of the background sample is pipetted into an acid and DI water rinsed centrifuge tube and 0.08 mL of the ICP routine spiking solution is added. Check the requested elements list for the specific elements to be spiked; some elements (antimony, boron, molybdenum, silicon, tin and titanium) are not included in the ICP spiking solution and require separate spiking. For most of these single element spiking solutions, 0.008mL or 0.016 mL of spiking solution is added to an 8 mL aliquot of sample. The spiking levels are the ICP spike levels unless the sample background level requires a higher spiking level. Fill out an “Unusual Instrument Spike” form if the spike sample requires higher spiking levels.

9.8. Matrix QC samples. With each preparation batch various matrix QC samples must be analyzed. At a minimum, a matrix spike, laboratory duplicate, method blank and a laboratory control sample should be prepared and analyzed. For some projects matrix spike duplicates, laboratory control sample duplicates, and/or certified reference materials may also be required. The analyst must check all paper work to make sure all necessary QC samples have been prepared and analyzed.

9.9. All logbooks are reviewed monthly for completeness and accuracy by the laboratory personnel.

9.10. The QA section will periodically review the standard preparation process, including standard bottles, logbooks and standard certificates and traceability to standardized sources.

10. Calibration and Standardization

10.1. Calibration is the process of establishing a linear relationship between emission intensity and concentration by analyzing a blank and four multiple element standards with a single concentration for each analytical line. As specified in EPA methods 200.7, 200.7CLP-M and SW-846 6010C, ARI uses a blank and a single standard concentration for each analytical line.

10.2. Calibration standards are prepared as described in Section 7.2.2 on the first day of the work week or more frequently if required.

10.3. Calibration Procedure

10.3.1. In the Automated Analysis Control window click on the Setup Tab, change the Results Data Set name by clicking [OPEN], then type in the filename using the format I#yymmdd (yy=year, mm=month, dd=day where I1yymmdd specifies the Optima 4300 and I2yymmdd specifies the Optima 7300). The Sample Information File should be set to CRISET.

10.3.2. Click on the Analyze tab. Put the internal standard uptake line into a full, well-mixed bottle of scandium Internal standard (20mg/L for the 4300 or 10mg/L for the 7300). Click on [Calibrate] to start the calibration. Review the Calibration Blank for adequate Sc sensitivity (compare to a previous calibration), good RSDs (<3%) and low intensities. After the calibration has been run, review the standards for both scandium %R (axial and radial) and good RSDs. Rerun any standards with RSDs >3% and scandium %R outside 90-110%.

10.3.2.1. To reanalyze a standard or the blank, close the Automated Analysis Control window, then open the Manual Analysis Control window. If the calibration blank is going to be reanalyzed, first rinse as described in section 10.3.2.2. Move the probe to the correct standard or blank tube, then with the correct standard number selected, click on [Analyze Standard] or [Analyze Blank]. After each solution has been analyzed, return to the rinse station. Review the slopes against the previous calibration's slopes in the file drawer; if the slopes are <70% of these slopes, notify the supervisor.

10.3.2.2. Move the probe to the mixed 10% nitric acid and 10% hydrochloric acid rinse solution and allow it to rinse for 15 minutes for the 4300 with AS91 autosampler or up to 5 minutes for the 7300 with ESI FAST autosampler.

11. Procedure

11.1. Initial Methods Development. Before any samples can be analyzed an analytic method must be developed which will include the determination and setting of all necessary background correction points, determination of inter-element correction factors plus linear calibration ranges, and the determination of instrument and method detection limits.

11.1.1. Background correction is required for many elements due to background interference. Single element and multiple element solutions at or near the top of the linear range are scanned during the methods development period. Various sample matrices are also scanned. The resulting intensity vs. wavelength plots show that background varies

depending on the elements present or matrix of the sample. Overlays of the plots reveal where background correction points can be set with minimal interference. One effect other elements have on a given analyte is a constant elevation of the background continuum emission spectrum. It is virtually impossible to set background correction positions free from line interference. The best compromise is to choose background correction positions that are optimized for the common major elements' interference: aluminum, calcium, chromium, cobalt, iron, magnesium, manganese, molybdenum, titanium and vanadium.

11.2. Inter-element Correction Factors and Linear Limit Verification

11.2.1. Inter-element Correction Factors

11.2.1.1. Due to the spectral complexity of emission spectra, spectral overlap must be identified and corrected by the appropriate factors. All inter-element correction factors (IECs) are checked biannually for each element; Al, Ca, Fe and Mg may be checked more frequently, if indicated or major instrument repairs are made. The extent of spectral overlap is determined by analyzing an ICP grade single element standard at the linear limit and identifying apparent concentrations of other elements. ICP grade standards must be at least 99.9% purity, ideally 99.999% purity in order to avoid trace contaminants being identified as spectral interferents. The concentration of each of the standards for IEC determinations is at the linear limit as this maximizes the ability to detect interferences.

11.2.1.1.1. IEC Procedure. Click on the Workspace icon. Select IEC.wsp. Confirm that the method is the "background correction only" method. Type in a Results Data Set name; if the biannual IEC checks are going to be analyzed, choose a consistent name to be used for the multiple analytical runs. Calibrate as usual. Prepare each IEC standard (dilute fresh from the Inorganic Ventures stocks) at the concentration used in the last IEC check; most are at the linear limit though some will be higher based on instrument capability. There are several IEC autosampler tables which can be used or modified, if necessary. Baseline checks (CCBs) are required immediately after calibration and every sample to check for carryover and baseline shifts. A CCV should be run at the beginning and end of the run and periodically throughout the run. The IEC data can be compared to previous determinations to spot any discrepancies; any new apparent concentration is considered a possible standard contaminant. If contamination is suspected, first check the Inorganic Ventures standard certificate to find out if this is a known contaminant. If not, re-prepare the standard and reanalyze it. If the possible contaminant is confirmed again, then depending on the magnitude of the IEC, a new lot of stock standard may be required. After the IEC standards have

been analyzed, from the pulldown menu, select File | New | IEC Model. Then, from the pulldown menu, select Tools | IEC Model Builder. On the Setup tab, under Data Sets, click on [Open], then highlight the filename. On the Set Limits tab, in the "Minimum Concentration for Interference Correction" field, type in the RL except for As 0.01, Pb 0.01, Sb 0.025, Tl 0.025, Cr 0.0025, Zn 0.006 and Se 0.025 mg/L (also Na33 may need to be set higher due to baseline drift); for ScA and ScR, type 200%. On the Calculate Factors tab, click on [Select Samples], hold down the Ctrl key and click on each of the IEC standards to be calculated (they should be highlighted). Click on [OK]. For each IEC standard, in the Interfering Analyte column, select the wavelength required. The software will calculate the IEC: the apparent elements' concentrations are divided by the read value of the standard, then multiplied by 1000. Save the IEC file using the Save As function; if this is the biannual IEC update, name the file using the format IECX, X being the next number in the series. If this is a partial IEC update, create a temporary file for the IEC calculations, these IECs will then be edited into the latest biannual IEC table. On the Summarize Factors tab, print a copy of the IECs by clicking on [Print Factors]. Review the IECs for baseline shifts, contaminants, new IECs, etc. by comparing them to the IEC reference table; revise the IEC file as needed. Then if this is a partial IEC update, edit the IECs into the latest biannual IEC table. Note: when performing the edits, some IECs may now be zero that were previously values, so be sure to zero these. Click on the Workspace icon. Select Daily.wsp. Then, in the Method window, on the Process tab, Spectral Corrections subtab, under IEC Model, select the updated IEC file. Save the method. The IEC entries are then verified by the supervisor. The raw data is filed in the IECs and Linear Limits file, and the IECs printout is filed in the Optima IECs file.

11.2.2. Linear Range Verification. Linear range limits are determined during the methods development period, many of them are set below instrument capability, limited by other concerns, such as IEC accuracy and carry over. All linear limits (see table 8) are verified at least biannually, simultaneously with IEC checks, by analyzing each element at the linear limit and verifying that the concentration at the linear limit is linear, within 10% of the true value. If the concentration of each standard is not within 10% of the true value; remake and reanalyze the standard once. If the standard is still outside the 10% limit, recalibrating or lowering the standard concentration may be required. File the raw data in the IECs and Linear Limits file.

11.2.3. The instrument detection limit (IDL) is determined and verified at least quarterly for each element.

11.2.4. Detection and quantitation limits (DL and QL, respectively) are determined at least annually for each element as described in ARI SOP 1018, Determination of LOD, LOQ and RL.

11.3. Daily ICP Set-up

11.3.1. Preparing the uptake system and the torch

11.3.1.1. First check that the autosampler rinse bottle, containing a 5% nitric acid and 5% hydrochloric acid solution, is at least half full, and the waste level in the waste carboy is less than ¾ full.

11.3.1.2. Scandium is used as an internal standard to compensate for physical interferences including viscosity and surface tension effects in the uptake system and plasma-loading effects due to high dissolved solids. The internal standard is added to all standards, blanks, and samples using an on-line mixing block or “T” between the peristaltic pump and nebulizer. Verify that the internal standard reservoir if full of the Scandium solution prepared in section 7.2.7.

11.3.1.3. Replace the Sample and Internal Standard peristaltic tubing every 2 analytical runs; and the Drain tubing weekly or more frequently as required. Place each pump tubing line in the guides of the pump beds; ensure that the tubing is not twisted. For the 7300 with ESIFast the internal standard line (orange-green) is placed on the inside position, the sample tubing (black-black) is in the center position, and the waste tubing (red-red) is in the outside channel. On the 4300 AS91 the right side tubing is the waste line (red-red tubing), the center tubing is the internal standard line (red-orange tubing) and the left side tubing is the sample line (black-black tubing). Clamp the tubing in place with the tensioned pump bed clamps. Daily adjustment of the pump bed tension or pump speed is not usually required. The usual sample uptake rate for the 4300 is 1.8 to 1.9 mL/min and can be measured with a graduated cylinder and stop watch. If it is necessary to adjust the pump bed tension after new pump tubing is attached, use the adjustment screw on the pump bed clamp. With the pump ON, loosen the adjustment screw until an air segment does not proceed through the tubing, then tighten the adjustment screw until flow begins. Typically, a half turn tighter of the adjustment screw beyond this point is sufficient for a stable setting (look for a smooth flow rate of an air segment). The 7300 ESIFast has been experimentally optimized for loop size and pump speed and should not be changed. On the morning following an auto shutdown, the pump tubings should be unclamped for at least 1 hour. Alternatively, the tubings can be removed and saved in a bag labelled with as “used” (good for one more run), and new tubings can be installed.

11.3.1.4. On the PE4300 dry the injector adapter every day prior to starting the instrument. Remove the spray chamber from the injector adapter and insert a rolled up Kimwipe into the neck of the adapter to absorb any moisture that has accumulated. (Accumulated moisture can be blown onto the axial and radial windows during pre-ignition gas purging.)

11.3.1.5. The PE4300 torch injector should be changed after 3 analysis days.

11.3.1.6. If the computer is on, shutdown the computer (exit Windows, and turn off the computer); this is required daily to avoid software problems. Push the computer ON button. For the 7300 the ESIFast software should be opened and initialized before the Winlab software is opened. To open the ESIFast software, on the desktop click on the ESI icon and then “initialize”. To open the instrument software, from the desktop click on the WinLab32 icon. Wait for the software to connect the instrument to the autosampler and chiller. Then click on the Wrkspc (workspace) icon, select Daily.wsp on the 4300 or Fast.wsp on the 7300; this will open most of the windows required for operation.

11.3.1.7. The PE4300 autosampler (A.S 91) probe will move into the rinse station. Clamp the autosampler’s rinse station peristaltic pump tubing tension lever down (horizontally) and verify that rinse solution is filling the rinse station. Press <F11> to raise the probe and stop the rinse station pump. The pharmed tubings (2 types) of the autosampler rinse station peristaltic pump are replaced as needed (typically every 2 months); each tubing has 2 sections, so use each section 1 month before discarding them. There is a light oil for use with these tubings which should be applied to the tubing between the stops.

11.3.1.8. The ESI Fast autosampler for the PE7300 needs to be initialized and the carrier and IS solution probes (marked with blue and green tape) put into DI water before starting the plasma.

11.3.1.9. In the Plasma Control window, click on [ON], on the ON/OFF switch. Watch the plasma “light,” and note any lighting difficulties. Inspect the plasma and torch during the first minute for any abnormalities. Put the probes in the rinse solution bottle (5%HNO3 /5%HCL). Ensure that all of the peristaltic pump tubings are pumping solution correctly before leaving the room—if the waste line doesn’t pump out the accumulating solution, the spray chamber will overflow and the plasma will go out! Major maintenance could be required. Warm-up the instrument for 45 minutes.

11.3.1.10. AS91: Put the sample probe in the sampler holder and the IS tubing in the 20ppm Sc solution.

11.3.1.11. ESI Fast: Put the Carrier probe (blue tape) in the carrier soln. bottle and the IS probe (green tape) in the 10ppm Sc solution.

11.3.1.12. After the warm-up period, in the Spectrometer Control Window, click on **Hg**

Realign to perform a mercury profile. In the Spectrum and Results windows from the pull-down menu review the results. Print out the Spectrum and note the Offset, Drift, and Slit Adjustment values.

11.3.1.13. PE7300 with ESI Fast: Open the Blanks autosampler table (Blks.sif). Put Calibration Blank solution in position 1 on the autosampler tray and run several (5) blanks to rinse the sample loop. Note the IS level in the Blanks for stability and RSD levels below 3%.

11.4. Create a new results data set. In the Automated Analysis window, click the Setup tab. Click on Results Data Set then open. Enter the new data set name in the format: I(x)yymmdd, where x = instrument #, yy=year, mm=month and dd=day.

11.5. Proceed with calibration as outlined in Section 10.3. Make a copy of the calibration report, staple it to the Hg profile results and file.

11.6. Analyze the ICV and ICB standards. Confirm the standard recovery is within 10% (unless analyzing drinking water samples which requires the ICV to be within 5%) of the known value, and the ICB value is less than the RL. If these conditions are not satisfied analysis must stop, the problem corrected, the instrument recalibrated, and the Initial Standards rerun.

11.7. Analyze CRI Standard. Confirm the standard is within 50% of the known value (20% for DOD), or else problem must be corrected and CRI run within limits before samples may be analyzed.

11.8. Analyze ICSA/B Standards. Confirm the standards return values of less than the RL for all non-spiked elements (unless contamination can be documented), and within 20% of the known value for spiked analytes.

11.9. Samples Analysis

11.9.1. Samples Selection and Preparation

11.9.1.1. To select samples for a daily analytical run, refer to Element for prepared samples. Prioritize samples by due date and other considerations such as elements requested, whether a data package is required, digestion matrix, anticipated high levels, etc. A typical analytical run is started with water samples and leachates, then soil samples, queued from low levels to high levels (based on color or client history). Typically, a group of 20 samples is set-up at a time. On the first day of the work week (when calibration standards are prepared), analyze the weekly check of deionized water and the independent QC solutions, early in the analytical run.

11.9.2. Analytical Run Order

11.9.2.1. Routine. The analytical run order of 20 samples would be as follows: ICV, ICB, CRI, ICSA, ICSAB, CCV, CCB, 10 samples, CCV, CCB. Note that the CRI, ICSA, and

ICSAB are counted as samples so that if they are included in a sample group only 7 actual samples can be included. Arrange each group of 10 samples beginning with suspected low level samples, such as method blanks, and ending with higher level samples, such as matrix spikes and reference samples. An exception to this would be immediately after an ICSA and ICSAB, which may cause unacceptable carryover if low level samples requiring aluminum, calcium, iron, or magnesium follow it. A digestion QC group will typically be analyzed in the following order to facilitate acceptance limit checking: matrix duplicate, background sample, matrix spike, and reference sample.

11.9.2.2. CLP-Q. The analytical run order of 20 samples would be as follows: ICV, ICB, CRI, ICSA, ICSAB, 7 samples, CCV, CCB, 10 samples, CCV, CCB. Arrange each group of 10 samples using the Routine guidelines as described above.

11.9.2.3. DOD. The analytical run order should be as CLP-Q plus: a serial-dilution (a fivefold dilution must agree within 10% of the original determination) and a post-digestion spike is performed with recovery 80-120% of the expected result.

11.9.3. Label 13 X100 mm polystyrene test tubes with the sample ID and dilution in the order in which they will be analyzed. Pre-rinse the test tubes with 10% nitric acid, then with deionized water.

11.9.3.1. Pour each sample into its pre-rinsed test tube, taking care to avoid transferring particulates. Hotblock soil digestates are diluted at least 1/2. Filtration of digestates is required when suspended particulates are present; often these particulates are a light color that is difficult to see. Since the uptake system is susceptible to clogging in the tubing connectors or in the nebulizer, care should be taken to notice which samples require filtration. An alternative to filtration is centrifugation. To centrifuge, pour about 30 mL of each sample into a centrifuge tube, balance the tubes in the centrifuge, and centrifuge at 2000 to 2500 rpm for 5 minutes.

11.9.3.2. Samples requiring dilution, i.e. samples with element(s) above 90% of the linear limit or with high levels that are likely to have carryover effects, can often be anticipated by the appearance of the sample. Soil digestates with a dark yellow, green or orange color can be high in iron, copper, chromium, etc., and paint digestates are often high in lead; these samples are typically first analyzed at a 1/10 or greater dilution. TCLP leachates prepared with extraction fluid #2 are often high in calcium and typically require a 1/5 or greater dilution. Water digestates are often less predictable: color is often an indicator of high analyte levels, although some industrial dyes or paints are highly colored yet have relatively low analyte levels. Viscosity during the pipette transfer from the sample bottle to the sample tube can be an indicator of high salts; also dried salt crystals

on the sample tube cap threads indicate high salts. Also, a review of the client job list can indicate a client project with a history of high level samples.

11.9.3.3. Prepare all required serial dilution and post spike samples as described in sections 9.6 and 9.7.

11.9.4. Instrument or Analytical Spiking. Undigested water samples and digestates requiring post-digestion spiking are spiked at the instrument before the sample is analyzed. An 8 ml sample is pipetted into a centrifuge tube and 0.08 mL of the ICP routine spiking solution is added. Check the requested elements list for the specific elements to be spiked; some elements (antimony, boron, molybdenum, silicon, tin and titanium) are not included in the ICP spiking solution and require separate spiking. For most of these single element spiking solutions, 0.008 mL of 500 mg/L spiking solution is added to a 8 mL aliquot of sample. For Sb, use 0.016 mL of 1,000 mg/L; for Si, use 0.008 mL of 10,000 mg/L.

11.9.5. Analysis of Samples and Autosampler Table Preparation

11.9.5.1. After an acceptable calibration has been performed, the ICV, ICB, CRI, ICSA, and ICSAB are analyzed. The autosampler table for this has already been created as CRISET. After the post-calibration rinse (15 minute for the 4300 and ~5 minutes for the 7300), click on [Analyze Samples] to start the analysis of these samples.

11.9.5.2. To create an autosampler table, click on the Sample Info icon. From the pulldown menu, select File | New | Sample Info File. Select CRISET.sid from the “Available Designs” for the 1st group of 17 samples. Samples may be added to the sample table during analysis.

11.9.5.2.1. Enter the Element sample IDs. The dilution should be entered in the “Diluted to Vol” field. The Column Fill function (right click with the mouse) can be used for sequencing autosampler locations and to copy sample IDs. If Cut and Paste edits are performed, check that all the required fields are filled, especially “Diluted to Vol”, and “Volume Units” (mL). Also, carefully check the autosampler locations after cutting and pasting. An increased wash time can be entered if necessary.

11.9.5.2.2. After all the sample information has been entered into the table, from the pulldown menu, select File | Save As | Sample Info File. Type the filename using the format: mmdd.sif (mm=month, dd=day); a letter can be added after the day to indicate different files on the same date.

11.9.5.3. To analyze these samples, open the Automated Analysis Control window. Check that the Sample Information Filename is correct. Click on the Analysis tab. Click on [Analyze Samples] if the entire table is to be run. If only a partial group of samples from the autosampler table is required, the samples to be skipped can be deleted in the

Sample Info window, then save the autosampler table and analyze them in the Automated Analysis Control window. Alternatively, on the Set Up tab, “All Defined” can be changed to “Sample Nos”. Then the required samples can be typed into the “Sample Nos.” field as a range of samples or as specific samples: eg. 8-20 or 8,10,12. Remember to reset this to “All Defined”, after the samples have been run, for later tables.

11.9.6. Monitoring the Analysis

11.9.6.1. Periodically during the operation of the ICP, check the sample uptake flow, the appearance of the plasma, the level of solution in the autosampler QC vials, the autosampler probe position and the rinse bottle level. To pause the analytical run, click on [Analyze Samples], then choose from either [Stop Immediately] or [Complete All Replicates for Current Sample].

11.9.6.1.1. Method QC samples such as the CV and the CB should be monitored closely during the analytical run to check for calibration stability and baseline drift. If the CV and/or CB are outside or approaching the QC limits, then corrective action should be taken as soon as possible to minimize sample reruns. Corrective action could include recalibrating the blank or the appropriate standards, or extra rinsing time followed by another CV and CB.

11.9.6.1.2. Monitoring High Levels and Carryover. If any sample level is above the linear limit, the high level sample should be diluted and rerun (see table 8 for the linear limits). If high level samples are analyzed, carryover into the following samples may occur. Carryover usually exhibits high SD or RSD in the following samples. Sodium, lead and boron are prone to carryover. Pausing the autosampler after the high level sample and rinsing as needed can often minimize carryover. A blank may be analyzed as a sample to verify that adequate rinsing time has passed. Note: Some projects (DOD) require any sample analyte that exceeds the concentration of the calibration standard be diluted (see table 2 for standard concentrations). If required, appropriate instructions will be noted in Element and it is the analysts’ responsibility to follow the instructions and document the necessary dilutions on the raw data.

11.9.7. Partial Recalibration. During an analytical run, partial recalibration may be necessary. To reanalyze a standard or the blank, close the Automated Analysis Control window, then open the Manual Analysis Control window. Move the probe to the correct standard or blank tube, then with the correct standard number selected, click on [Analyze Standard], or click on [Analyze Blank]. After each solution has been analyzed, return to the rinse station. After the recommended rinse time, restart the analytical run with a CCV and CCB. Note: to reset the internal standard percentage of the calibration blank, a complete recalibration is

necessary.

11.10. Troubleshooting Instrument Problems during the run.

11.10.1. Clogs. The uptake lines and connectors should be monitored for clogs, which may form from sample particulates and from airborne particulates that can be in the autosampler vials, due to the nature of open vial autosampler operation.

11.10.2. Autosampler. The autosampler should be monitored for probe misses and tubing disconnections. The time that the plasma is running without any aerosol should be minimized.

11.11. ICP Shutdown. After completion of the autosampler run the instrument can be shutdown either manually or for overnight unattended runs automatically.

11.11.1. Manual (attended) Shutdown: Place the internal standard line in deionized water. Rinse the uptake system with the mixed 10% hydrochloric acid and 10% nitric acid solution for 10 minutes. Rinse with deionized water for 10 minutes. Remove the probe and the internal standard line from the deionized water bottle and let the lines pump dry. On the Plasma Control window, click on [OFF] on the ON/OFF switch.

11.11.2. Automated (unattended) Shutdown: On the Automated Analysis Control Window, click on [SET] next to Auto Shutdown. Click next to “Shutdown” and next to “At the End of Automated Analysis”. PE4300 only: Check that both “Wash Before Shutdown” and “Turn Off Plasma and Pump” are checked. Click on [OK] to complete the auto shutdown set-up. PE7300: add the “rinse set” to the end of the run (4 X’s Acid rinse and 4 X’s DI rinse). Click on OK to complete the auto-shutdown set-up.

11.11.3. Data storage: When the analytical run is done, the sample file should be exported for upload to Element. From the pulldown menu, select File | Utilites | Data Manager. Highlight the file name to be exported, then click on the Export icon. At #1, “Select Export Design”, click on [Use Existing Design], then click on [Browse] and select prnexpt . Advance to #4, “Select Export Options”, and enter the filename as I1yymmdd or I2yymmdd (yy=year, mm=month, dd=day). Advance to #8, “Export Data Set”, click on [Export Data], then click on [Finish].

11.11.4. Data Analysis and Calculations

11.12. The percent recovery for an aqueous LCS is calculated according to the following:

$$\%\ R = \frac{LCS}{s} * 100$$

Where:

%R: Percent Recovery

LCS: LCS, REF, or MBSPK Results

s: True concentration Data entry

11.13. Calculate the percent recovery for the matrix spike as follows:

$$\%\ R = \frac{C_s - C}{s} * 100$$

Where:

%R: Percent Recovery

Cs: Measured concentration in fortified sample matrix

C: Measured concentration in unfortified sample

s: Amount of analyte added to sample matrix

11.14. Calculate the RPD as follows:

$$RPD = \frac{D_1 - D_2}{(D_1 + D_2)/2} * 100$$

Where:

RPD: Relative Percent Difference

D_1: Measured concentration of first sample

D_2: Measured concentration of replicate sample

12. Method Performance

12.1. Detection and quantitation limit studies are performed for all analytes as described in ARI SOP 1018, Determination of LOD, LOQ and RL.

12.1.1. The DLs must be lower than in-house QLs. If not, the QLs will need to be changed or the study replicated.

12.1.2. DLs and QLs shall be re-determined annually or following any change to the sample preparation procedure

12.2. Analytical accuracy is determined using LCS/MBSPK, SRM or MS analyzes. Acceptance limits for spike recovery are specified in the analytical methods and are normally 80 to 120% for LCS and 75 to 125% for matrix spikes. Acceptance limits for SRM analyzes are determined by the SRM supplier or manufacturer.

12.3. Laboratory precision is measured by performing replicate analyzes. Replicates (sample or matrix spike) acceptance limits are ± 20%.

12.4. Accuracy and precision acceptance limits are disseminated to the bench chemists and LIMS administrator for use in monitoring method performance in real time.

13. Pollution Prevention

13.1. All acidified sample waste must first be neutralized prior to sink disposal.

13.2. Dispose of expired standards into the designated barrel in the hazardous waste room.

13.3. Samples that are designated as hazardous waste by the LIMS “Hazardous Report” must be placed in the designated drum in the Hazardous Waste Storage Area when they are disposed. This process is described in SOP 1003S.

14. Data Assessment and Acceptance Criteria for Quality Control Measures

14.1. Data Review

14.1.1. The ICP raw data is reviewed by the analyst periodically during the analytical run and reviewed comprehensively before loading the data to Element. The data reviewer needs to be aware that there can be many project specific requirements and QC criteria that are not covered in this SOP. It is your responsibility to verify what QC limits are required for a specific project and make sure that the data is properly reviewed and that all necessary corrective actions are performed and documented.

14.1.2. Raw Data Review. Look through the raw data printout, highlighting the requested elements and concentrations of every client sample. Note on the instrument log and raw data any comments on instrument problems, delays, unusual occurrences, etc. Review the data for high levels, carryover, poor precision, method blank contamination, and any anomalies. All corrections should be initialed and dated. Also highlight any ICP-MS elements which are at concentrations higher than are feasible to be analyzed by ICP-MS. If any ICP-MS elements are switched or transferred to ICP analysis (with project manager approval), all associated QC samples must also be checked for that element (e.g. method blank, matrix duplicate, matrix spike, serial dilution, reference), and a “Transfer to ICP” form should be filled out.

14.2. QC Samples Review

14.2.1. Method QC solutions

14.2.1.1. Internal standards. The Sc internal standards intensity for each sample and standard must be within 70-130% of the calibration blank intensity with an RSD <3% to be acceptable. If the RSD is high review individual analytes and check SDs for acceptability. Reruns of samples can verify noise due to matrix effects. If the recovery is > 130% rerun effected samples. If the recovery is low <70%, the problem may be matrix related and samples should be rerun at dilution.

14.2.1.2. The calibration verification solutions ICV and CCV should be analyzed after initial calibration and again after every 10 samples are analyzed. The acceptance limits for the CVs are 90% to 110% of true values for each requested element; see table 5 for the concentrations of the CV solution elements. For drinking water samples analyzed with method 200.7 the ICV must be within 95% to 105% of the true value whereas all CCVs

have a control limit or 90% to 110%. If the concentrations are outside this range, the analyst should look for the possible cause. Corrective action should be taken immediately, typically recalibrating the appropriate standards, then after adequate rinsing the analytical run should be resumed with a CCV, CCB. All samples between the out-of-control standard and the last in-control standard must be reanalyzed. Samples must be bracketed by in-control calibration verification standards and blanks.

14.2.1.3. The initial calibration blank (ICB) is analyzed immediately after the ICV and the continuing calibration blank (CCB) is analyzed immediately after each CCV. The limits for the ICB/CCB are ± 1 RL for each requested element (see table 8 for RLs). DOD requires a control limit of 2 x MDL. It is the analysts' responsibility to verify which control limits are required for each batch of samples. All the appropriate information will be in the job folder and the raw data must be labeled as to which control limits are being used. If the concentrations are outside this range, the analyst should look for the possible cause (eg. calibration blank intensities too high, baseline drift, contamination, etc.). Corrective action should be taken immediately, typically recalibrating the blank solution, then the analytical run should be resumed with a CCV, CCB. All samples between the out-of-control blank and the last in-control blank must be reanalyzed. Samples must be bracketed by in-control calibration verification standards and blanks.

14.2.1.4. The interference check solutions, ICSA and ICSAB (see table 6), are analyzed to check the commonly applied IECs after calibration verification. For ICSAB solutions, QC limits are 80% to 120% of the true values for both interferents and analytes. For the ICSA, QC limits are 80% to 120% of the true values of the interferents and the apparent concentrations of non-spiked elements should be ± 2RL. DOD requires a control limit of <2 X MDL for non-spiked analytes (unless they are a verified trace impurity from one of the spiked analytes or a "common laboratory contaminant"). It is the analysts' responsibility to verify which control limits are required for each batch of samples. All the appropriate information will be in the job folder and the raw data must be labeled as to which control limits are being used. If any element(s) is outside these limits, it should be noted in the ICP logbook and the supervisor should be notified. If the out of limits reading is reproducible, the possible interference elements should be verified by analyzing single element linear limit standards and all IECs should be updated in the method.

14.2.1.5. CRI or reporting limit standard (see table 4) verifies the accuracy of the instrument at the RL for all analytes. This standard should be within 1/2 RL of the true value. DOD requires that the CRI to be within 20% of the true value. If required, appropriate

instructions will be in the job folder and it is the analysts' responsibility to follow the instructions and document the necessary control limits on the raw data. If the concentrations are outside the specified range, the analyst should look for the possible cause (eg. calibration blank intensities too high, baseline drift, contamination, etc.). Corrective action should be taken immediately, typically recalibrating the blank solution, then the analytical run should be resumed with a CCV, CCB, CRI, ICSA, and ICSAB. The CRI should be analyzed immediately before each ICSA / ICSAB.

14.2.1.6. Serial Dilution. A five-fold serial dilution is performed on a sample, typically the sample used for matrix QC, from each group of samples of a similar prepcode for each sample digestion batch. The serial dilution should not be performed on a field blank or equipment blank. If the analyte concentration is >10X the RL in the diluted sample, then the serial dilution sample should agree within 10% of the undiluted sample. If the analyte is outside the 10% limit, a matrix effect should be suspected. Fill out a green analyst notes form so the data can be qualified. DOD require a serial dilution be performed on at least one sample in their batch.

14.2.1.7. Post–digestion spike. A post spike is performed when matrix problems are suspected or on one sample in each batch for DOD samples. The sample is spiked at normal ICP levels or higher if necessary. The spike should be recovered at 80% to 120% or matrix effects should be suspected. Fill out a green analyst notes form so the data can be qualified.

14.2.2. Digestion / Batch QC Samples

14.2.2.1. Method Blanks. A method blank (MB) is prepared with every client batch of samples of 20 or fewer samples, and for each preparation type. The method blank must be < RL for every requested element. DOD requires a control limit of <1/2 the RL except for common laboratory contaminants. If required, appropriate instructions will be in the job folder and it is the analysts' responsibility to follow the instructions and document the necessary control limits on the raw data. Before corrective action is taken, rerun the method blank for confirmation. Also the baseline (CB) should be checked; if outside the limits, recalibrate the blank, analyze a CV and CB, and then reanalyze the method blank. If the detected element is greater than the limit, then all the associated samples must be re-digested and reanalyzed unless all samples are greater than 10 times the detected method blank concentration or in the case of DOD projects undetected. DOD soil projects also require the use of Teflon boiling chips as a matrix in the blanks. The analyst should fill out a corrective action form and the supervisor should be informed when results are out of control.

14.2.2.2. Matrix / Digestion Duplicate. A duplicate sample is prepared to test the reproducibility of the analysis and sample homogeneity. The acceptance limits are based on the analyte concentration. A matrix duplicate is prepared with every client batch of samples of 20 or fewer samples, and for each preparation type. If both background and duplicate sample concentrations are at least 5RL, then the relative percent difference (RPD) should be ≤20%. If either the background or duplicate sample concentration is < 5RL, then the absolute difference between the two concentrations should be 1 RL or less. For soil and tissue samples, the sample concentrations must be calculated in mg/Kg units. If a duplicate RPD is outside the acceptance limits, then a corrective action form should be filled out by the analyst and the supervisor should be informed.

14.2.2.3. Matrix / Digestion Spike. A matrix spike sample is spiked before digestion to detect losses during digestion and matrix effects on digestion efficiency. If the sample does not require digestion, it is spiked at the instrument. A matrix spike is prepared with every client batch of samples of 20 or fewer samples, and for each preparation type. The QC limits for spike recovery are 75% to 125%, or 80% to 120% for DOD projects. If the sample concentration is greater than 4X the spike added concentration, there are no QC limits; the matrix spike report will be flagged with an H flag indicating that the spiking level is not appropriate. For soil and tissue samples, the sample concentrations must be calculated in mg/Kg units, including the spike added; the “spike added” mg/Kg calculation, uses the spike sample weight. Antimony is difficult to recover from soil digestates; these are rarely re-digested and reanalyzed. If the matrix spike recovery is outside the QC limits, then the analyst should fill out a corrective action form, the data will be flagged and the supervisor should be informed. The background sample, the matrix duplicate and the matrix spike may be re-digested and reanalyzed. For CLP-Q type samples out-of-control spikes a post-digestion spike is performed (see Section 9.7).

14.2.2.4. References/MBSPK (LCS). A reference sample or an MBSPK/LCS (method blank spike/laboratory control sample) is a sample of known and/or certified analyte concentrations, is prepared with every client batch of samples of 20 or fewer samples, and for each preparation type. Water and soil references are used. For a water reference or for an MBSPK, the QC limits are 80% to 120%. Drinking water analysis by method 200.7 requires a control limit of 85% to 115%. For a soil reference, the certified ranges are used as QC limits (though a client may specify other limits). For soil and tissue samples, the reference concentrations should be calculated in mg/Kg units. If the recovery is outside the QC limits, then the entire sample batch must be re-digested and

reanalyzed. The analyst should fill out a corrective action form, and the supervisor should be informed.

14.3. Samples Review

14.3.1. Precision Criteria

14.3.1.1. For most elements that occur in samples at moderate (≥ 10RL) to high concentration levels, including both views of Sc (ScR and ScA), the RSD of the 3 replicates should be less than 3%. For elements that occur in samples at low concentration levels (<10 times the RL), the SD should be ± 1RL. Exceptions should be noted in the Log Book along with resolutions (i.e. reruns, comparison with previous results).

14.3.2. Carryover

14.3.2.1. Carryover is the effect of a higher level sample on a lower level sample which follows, causing the lower level sample to read higher than it would otherwise. The SD or RSD will sometimes be higher than normal in these cases. Sometimes high level carryover does not exhibit elevated SD or RSD, but is only evident in the blank as a consistently high level (all replicates higher than usual). Samples that are affected by possible carryover should be reanalyzed. The common carryover elements are boron, lead and sodium.

14.3.3. Linear Limit

14.3.3.1. All acceptable sample results must be less than 90% of the linear limit for each element in the sample. DOD projects require that no sample concentration exceeds the concentration of calibration standard. Samples that have any analyte concentrations (for both requested and non-requested elements) greater than 90% of the linear limit (or, on a project specific basis the calibration standard) should be diluted at the lowest possible dilution and reanalyzed.

14.3.4. Interelement Correction Factors. The interference check solutions may provide evidence of some IECs which need updating, if the QC limits for these solutions have not been met. Also samples may exhibit indications of IECs that may need slight adjusting: if a sample has a high level of an interferent element and other elements have concentrations that are negative lower than 2RLs. Also a wavelength scan of the sample could be performed to check for interference at the background correction point(s). Notify the supervisor of the problem so that it can be investigated.

14.3.5. Rounding

14.3.5.1. The rounding rule is to round to the even number if the digit following those to be retained is 5 (i.e. 40.55 would round up to 40.6 where 40.65 would round down to 40.6).

For rounding CBs or low level samples to the RL, round to the RL with 1 significant figure (i.e. Sn 0.014 would round to 0.01, the Sn RL).

14.3.5.2. When evaluating whether a QC sample is in control round all results before calculating recoveries. In the case of method blanks, detection and/or non-detects are determined before the result is rounded.

14.4. ICP Sample Logbook Review

14.4.1. The logbook pages should be dated with the analytical run start date, numbered sequentially, and initialed/dated for corrections, if applicable. The calibration standard numbers should be listed in the comments column. If the samples are CLP-Q or PKG, the CCVs and CCBs should be numbered sequentially. If a sample is checked for deletion, there should be a comment explaining the reason for the rerun or the reason for the deletion. After checking the analytical run's logbook pages for completeness, photocopy the appropriate ICP sample logbook pages that correspond to the raw data. Check every sample label (job number, sample letter, prepcode) and dilution factor. Highlight the client sample edits, sample analysis deletions, and dilution factor edits on the logbook photocopies so that they are not missed during the data loading process.

14.5. The logbook photocopies, along with the highlighted raw data are scanned to the calibration in Element. Fill out the Reviewer Checklist in Element, noting any out of control QC, sample re-preps, etc.

14.6. Contingencies for Handling Out-of-Control or Unacceptable Data

14.7. Calibration: If the calibration does not meet the criteria in section 15, then corrective action shall be taken before proceeding with recalibration. This could involve uptake rate optimization, clog removal, re-preparation of calibration standards, etc.

14.8. Instrumental QC checks: If an instrumental QC sample (CV, CB, QCS, etc.) is out of control, then corrective action shall be taken before proceeding with analysis. This could involve recalibration of the blank (resetting the baseline), repreparation of calibration standards and recalibration, etc.

14.9. Instrument malfunctions: When instrument malfunctions occur, consult with other experienced ICP operators or the supervisor for guidance. The maintenance logbook, the ICP hardware manual, or the ICP software manual could be helpful for troubleshooting. If the problem cannot be resolved contact Perkin Elmer service for immediate service. The instrument is covered under a service contract.

14.10. In the event of significant QC failure, analysis will stop and the analyst will perform corrective action as discussed above. In general, out-of-control sample results will not be reported. Reruns will be conducted based on sample availability. If insufficient sample remains, the client will be

notified to determine an appropriate course of action.

14.11. All corrective actions will be clearly and completely documented on a corrective action form. All required maintenance and instrument repairs will be clearly documented in the ICP maintenance log.

14.12. In the event of a major instrument failure immediately inform the project managers so all critical samples can be subcontracted if necessary.

15. Waste Management

15.1. ARI's Laboratory Chemical Hygiene Plan (CHP) describes internal hazardous waste handling procedures. All analysts must be familiar with these requirements.

15.2. ARI properly profiles and disposes all hazardous waste using an EPA registered TSD (Treatment, Storage and Disposal) facility.

16. Method References

16.1. USEPA, Test Methods for Evaluating Solid Waste, SW-846, Volume IA, Method 6010C, Revision 3, February 2007

16.2. USEPA, Environmental Monitoring Systems Laboratory Office of Research and Development, Method 200.7, Revision 5 1998

16.3. DOD Quality Systems Manual for Environmental Laboratories, Version 5.0, July, 2013

17. Appendix and Tables

17.1. Instrument Maintenance

17.1.1. All maintenance should be noted in the ICP maintenance logbook.

17.1.2. Uptake System Peristaltic Pump Tubings. See section 11.3.1.3.

17.1.3. Autosampler Peristaltic Pump Tubings. See section 11.3.1.7.

17.1.4. Injector maintenance. The torch injector on the 4300 is changed every 3 analysis days; the injector on the 7300 is changed less frequently but should be checked and inspected daily. Salt and carbon deposits accumulate on the tip resulting in increased carryover effects. The injector replacement procedure is described in the Optima Hardware Guide, page 5-14 (chapter 5, page 14). After removing the old injector, clean the injector adapter with cotton swabs dipped in deionized water. Replace the used injector with a cleaned and thoroughly dry injector. The used injector should be rinsed with deionized water, then soaked in a mixed solution of 10% nitric acid and 10% hydrochloric acid for approximately 1 hour and rinsed with deionized water; thoroughly dry in a warm place for 24 hours. After an injector change, the axial and radial plasma viewing positions should be optimized. When the instrument has completed the warm-up period, perform a Hg profile. To optimize

the axial viewing position, in the Spectrometer Control window under Plasma, click on [Axial]. Aspirate the 1 mg/L Mn solution, then click on [Align View] and Mn will appear as the default element. Watch the readings as they are displayed in the Results window; observe the peak intensity and check for adequate intensity. To optimize the radial viewing position, in the Spectrometer Control window under Plasma, click on Radial]. For the 4300 aspirate the 10 mg/L Mn solution, for the 7300 continue to aspirate the 1 mg/L Mn solution, then click on [Align View] and Mn will appear as the default element. Again, observe the peak intensity and check for adequate intensity. After both optimizations are complete, record the data in the maintenance log: x and y positions, and Mn intensities.

17.1.5. Bimonthly maintenance. Approximately every 2 weeks, the spray chamber, the nebulizer, the mixing block, the axial and radial windows, and the air filters are cleaned.

17.1.5.1. Spray Chamber. The spray chamber replacement procedure is described in the Optima Hardware Guide, pages 5-14 to 5-27. To clean the spray chamber, rinse it with deionized water, then soak it in a mixed solution of 10% nitric acid and 10% hydrochloric acid for 30 minutes. Rinse it thoroughly with deionized water; drying is not necessary before use.

17.1.5.2. Nebulizer. The nebulizer replacement procedure for the 4300 is described in the Optima Hardware Guide, pages 5-67 to 5-68. An indicator of nebulizer clogging is an elevated nebulizer back pressure reading (normal range 180-200). Remove the plastic threaded inlet nut and remove the brass nut with the attached argon line. Backflush the Gemcone nebulizer with DI water or Blank solution then rinse thoroughly with deionized water. Dry the argon and sample inlets with a Kimwipe® rolled into a pointed blotter. Using a fine tip deionized water bottle, squirt deionized water through the plastic inlet nut. Replace the plastic inlet nut and the sample line. Then dry the gas passages of the nebulizer by connecting the brass argon gas fitting and turning on the nebulizer argon flow to 1 L/min; allow 5 minutes to completely dry the gas passages. Reset the nebulizer argon flow to 0.5 L/min. **The PFA ST nebulizer for the 7300 must not be backflushed or sonicated.** It should be soaked in the ICP acid rinse solution and then in MeOH to remove deposits. If it is clogged the Obstruction Removal Kit can be used. Note: PFA ST nebulizers can be sent to ESI for repair.

17.1.5.3. Mixing Block. Using a fine tip deionized water bottle, squirt deionized water through the orifices of the mixing block after the 3 fittings have been removed. Squirt deionized water through each of the fittings and their attached connector tubings. Replace the fittings carefully—do not cross-thread them.

17.1.5.4. I.S. “T”. Flush with DI using a syringe with a luer-lock fitting. If clogged, replace

and send the clogged fitting to ESI for repair.

17.1.5.5. Air filters. There are three air filters, one on the back (left side) of the instrument, one on the right side of the instrument and one on the chiller. Replace these with the clean spare filters. Clean the dirty filters with warm water, then air dry them before storing them.

17.1.5.6. Optical Windows. The axial and radial windows should be cleaned along with the nebulizer and spray chamber. The axial window requires removal from the instrument for cleaning, see the Optima Hardware Guide, pages 5-38 to 5-40. Loosen the 2 set screws on the shear gas nozzle bracket; move the bracket to the left. Remove the axial window assembly, as described in the manual. To clean it, remove the axial window from its housing, use cotton swabs dipped in 10% nitric acid to clean the isolated axial quartz window, followed with deionized water rinsing. Dry the window with lens paper and thoroughly dry in a warm place for 30 minutes. Reassemble the axial window assembly and fit it into place. Move the shear gas nozzle bracket back into place with the slit 5 mm from the axial window and straight up and down then secure the 2 set screws. The radial window can be cleaned in place using lens paper and methanol (if necessary, it can be removed as described in the Optima Hardware Guide on pages 5-35 to 5-38).

17.1.6. Torch maintenance. The torch is changed infrequently; with normal use, it will get clouded with both white and black residues, which rarely affect performance unless they cause warping or cracking of the torch. The torch replacement procedure is described in the Optima Hardware Guide, pages 5-14 to 5-27. Replace the torch with a cleaned and thoroughly dry torch with a new copper foil sticker positioned over the hole; the spare torch may have some white clouding which is acceptable. Check for excessive deformation of the quartz around the cutout; there is a normal offset between the sides of the cutout. To clean the torch, sonicate it in 1% Citranox® solution for 15 minutes, then rinse with deionized water. Then soak it in a mixed solution of 10% nitric acid and 10% hydrochloric acid for 30 minutes. Follow this soak with deionized water rinsing, then thoroughly dry it in a warm place for 24 hours.

TABLE 1
Optima Calibration Stocks

ICP STD2 Stock

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Ba	5% HNO_3	10,000	5	100	500
Cd	"	10,000	5	"	500
Co	"	10,000	5	"	500
Cr	"	10,000	5	"	500
Cu	"	10,000	5	"	500
Mn	"	10,000	5	"	500
V	"	10,000	5	"	500

ICP STD3 Stock

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Ag	5% HNO_3	1,000	5	100	50
As	"	10,000	5	"	500
B	"	10,000	5	"	500
Be	"	10,000	2.5	"	250
Na	"	10,000	25	"	2500
Ni	"	10,000	5	"	500
Pb	"	10,000	5	"	500
Se	"	10,000	5	"	500
Sr	"	10,000	2.5	"	250
Tl	"	10,000	5	"	500
Zn	"	10,000	5	"	500

TABLE 1 (cont.)

ICP STD4 Stock

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Mo	Deionized H_2O w/ plasticware	10,000	5	100	500
Sb	"	10,000	5	"	500
Si	"	10,000	5	"	500
Sn	"	10,000	5	"	500
Ti	"	10,000	5	"	500

ICP STD5 Stock

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Fe	5% HNO_3	10,000	50	200	2,500
K	"	10,000	50	"	2,500
Na	"	10,000	50	"	2,500
Al	"	10,000	15	"	750
Ca	"	10,000	15	"	750
Mg	"	10,000	15	"	750

TABLE 2

Optima Calibration Standards
All concentrations in mg/L (ppm)

STD 2	Stock Conc	Final Conc		STD 4	Stock Conc	Final Conc
Ba	500	10		Mo	500	10
Cd	500	10		Sb	500	10
Co	500	10		Si	500	10
Cr	500	10		Sn	500	10
Cu	500	10		Ti	500	10
Mn	500	10				
V	500	10				
STD 3	Stock Conc	Final Conc		STD 5	Stock Conc	Final Conc
Ag	50	1.0		Al	750	30
As	500	10		Ca	750	30
B	500	10		Fe	2500	100
Be	250	5.0		K	2500	100
Na	2500	50		Mg	750	30
Ni	500	10		Na	2500	100
Pb	500	10				
Se	500	10				
Sr	250	5				
Tl	500	10				
Zn	500	10				

TABLE 3

CRI/MDL Stock

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Ag	5% HNO_3	10,000	0.06	100	6
Al	"	10,000	1.0	"	100
As	"	10,000	1.0	"	100
B	"	10,000	0.4	"	40
Ba	"	10,000	0.06	"	6
Be	"	10,000	0.02	"	2
Ca	"	10,000	1.0	"	100
Cd	"	10,000	0.04	"	4
Co	"	10,000	0.06	"	6
Cr	"	10,000	0.1	"	10
Cu	"	10,000	0.04	"	4
Fe	"	10,000	1.0	"	100
K	"	10,000	10.0	"	1000
Mg	"	10,000	1.0	"	100
Mn	"	10,000	0.02	"	2
Mo	"	10,000	0.1	"	10
Na	"	10,000	10.0	"	1000
Ni	"	10,000	0.2	"	20
Pb	"	10,000	0.4	"	40
Sb	"	10,000	1.0	"	100
Se	"	10,000	1.0	"	100
Si	"	10,000	1.2	"	120
Sn	"	10,000	0.2	"	20
Sr	"	10,000	0.02	"	2
Ti	"	10,000	0.1	"	10
Tl	"	10,000	1.0	"	100
V	"	10,000	0.06	"	6
Zn	"	10,000	0.2	"	20

TABLE 4

CRI and MDL Solution Levels

Element	CRI Soln mg/L	MDL Soln mg/L		Element	CRI Soln mg/L	MDL Soln mg/L
Ag	0.003	0.012		Mn	0.001	0.004
Al	0.05	0.200		Mo	0.005	0.020
As	0.05	0.200		Na	0.50	2.0
B	0.02	0.080		Ni	0.01	0.040
Ba	0.003	0.012		Pb	0.02	0.080
Be	0.001	0.004		Sb	0.05	0.200
Ca	0.05	0.200		Se	0.05	0.200
Cd	0.002	0.008		Si	0.06	0.240
Co	0.003	0.012		Sn	0.01	0.040
Cr	0.005	0.020		Sr	0.001	0.004
Cu	0.002	0.008		Ti	0.005	0.020
Fe	0.05	0.200		Tl	0.05	0.200
K	0.50	2.0		V	0.003	0.012
Mg	0.05	0.200		Zn	0.01	0.040

TABLE 5

Calibration Verification (CV) Solution
1/100 Dilution of Inorganic Ventures AR-ICPCV-2 and AR-ICPCV-5
Matrix 5% HNO_3 and 5% HCl

Element	Conc mg/L		Element	Conc mg/L
Ag	1.0		Mn	1.0
Al	2.0		Mo	1.0
As	2.0		Na	50.0
B	1.0		Ni	1.0
Ba	1.0		Pb	2.0
Be	1.0		Sb	2.0
Ca	2.0		Se	2.0
Cd	1.0		Si	2.0
Co	1.0		Sn	1.0
Cr	1.0		Sr	1.0
Cu	1.0		Ti	1.0
Fe	2.0		Tl	2.0
K	20.0		V	1.0
Mg	2.0		Zn	1.0

TABLE 6
ICP Interference Check Solutions

ICSAB Stock

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Ag	5% HNO_3	10,000	1.0	100	100
As	"	10,000	1.0	"	100
Ba	"	10,000	1.0	"	100
Be	"	10,000	1.0	"	100
Cd	"	10,000	1.0	"	100
Co	"	10,000	1.0	"	100
Cr	"	10,000	1.0	"	100
Co	"	10,000	1.0	"	100
Cr	"	10,000	1.0	"	100
Cu	"	10,000	1.0	"	100
Mn	"	10,000	1.0	"	100
Ni	"	10,000	1.0	"	100
Pb	"	10,000	1.0	"	100
Sb	"	10.000	1.0	"	100
Se	"	10,000	1.0	"	100
Tl	"	10,000	1.0	"	100
V	"	10,000	1.0	"	100
Zn	"	10,000	1.0	"	100

ICSA Solution

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Al	5% HCl, 5% HNO_3	10,000	20	1000	200
Ca	"	10,000	10	"	100
Fe	"	10,000	20	"	200
Mg	"	10,000	10	"	100

TABLE 6 (cont.)

ICSAB Solution

Element	Matrix	Stock Conc. mg/L	Stock Vol. mL	Final Vol. mL	Final Conc. mg/L
Al	5% HCl, 5% HNO_3	10,000	20	1000	200
Ca	"	10,000	10	"	100
Fe	"	10,000	20	"	200
Mg	"	10,000	10	"	100
ICSAB stock	"	100	10	"	1.0

TABLE 7: ICSA and ICSAB Solution Levels

ICSA: Interferents

Element	Conc mg/L
Al	200
Ca	100
Fe	200
Mg	100

ICSAB: Interferents with Analytes

Element	Conc mg/L
Ag	1.0
Al	200
As	1.0
Ba	1.0
Be	1.0
Ca	100
Cd	1.0
Co	1.0
Cr	1.0
Cu	1.0
Fe	200
Mg	100
Mn	1.0
Ni	1.0
Pb	1.0
Sb	1.0
Se	1.0
Tl	1.0
V	1.0
Zn	1.0

TABLE 8: OPTIMA 4300DV Emission Lines, RLs and Linear Limits

Element	Emission Line (nm)	Axial (A) Radial (R)	RL (mg/L)	Linear Limit (mg/L)
ScA	357.253	A	n/a	n/a
ScR	361.383	R	n/a	n/a
Ag	328.068	A	0.003	5
Al	308.215	R	0.05	250
As	188.979	A	0.05	30
B	249.677	R	0.02	80
Ba	233.527	R	0.003	100
Be	313.042	R	0.001	5
Ca	317.933	R	0.05	500
Cd	228.802	A	0.002	20
Co	228.616	A	0.003	50
Cr	267.716	R	0.005	100
Cu	324.752	A	0.002	40
Fe	273.955	R	0.05	250
K	766.490	R	0.5	500
Mg	279.077	R	0.05	500
Mn	257.610	R	0.001	30
Mo	202.031	A	0.005	40
Na	589.592	R	0.5	50
Na	330.237	R	50	5000
Ni	231.604	R	0.01	100
Pb	220.353	A	0.02	300
Sb	206.836	A	0.05	30
Se	196.026	A	0.05	20
Si	288.158	R	0.06	100
Sn	189.927	A	0.01	10
Sr	421.552	R	0.001	5
Ti	334.903	R	0.005	100
Tl	190.801	A	0.05	30
V	292.402	A	0.003	50
Zn	206.200	R	0.010	100

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

Metals Analysis – NexIon ICP-MS

SOP 543S
Version 003.3

Revision Date: 2/23/17
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Prepared by:

Jay Kuhn / Eric Larson

Approvals:

Eric Larson, Inorganics Division Manager

David R. Mitchell, Quality Assurance Manager

Annual Review

SOP Number: 543S

Title: Metals Analysis – NexIon MS

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

1. Scope and Application

1.1. This Standard Operating Procedure describes the daily operation, tuning, optimization, and analysis procedures for the analysis of samples on an ICP-MS according to EPA Method 200.8 Ver 5.5 1998 and SW-846 Method 6020A 2007. See Appendix 10 for a list of isotopes.

1.2. Most samples will require some form of sample preparation, preservation, filtration and/or digestion, prior to analysis. This procedure is applicable to aqueous samples and acid digestates of solid samples.

1.3. Routine operation and maintenance procedures for the NexION® ICP-MS may be found in the NexION® Manual provided by the instrument manufacturer.

1.4. Detailed instructions on the use of the NexION® ICP-MS operating software may be found in the NexION Software Manual.

1.5. Instructions on the use of the ESI Fast system may be found in the ESI Software Manual.

2. Summary of the Procedure

2.1. This method describes the multi-element determination of trace elements by Inductively Coupled Plasma – Mass Spectrometry (ICP-MS). Sample material in solution is introduced by nebulization into a radio frequency plasma where energy transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially pumped vacuum interface and separated on the basis of their mass-to-charge ratio. The separated ions are detected and the ion information processed by a data handling system.

2.2. Interferences related to the technique must be recognized and corrected. Such corrections may include compensation for isobaric elemental interferences and interferences from poyatomic ions derived from plasma gas, reagents, or sample matrix.

2.3. Instrumental drift, as well as suppressions or enhancements of instrument response, must be corrected by the use of internal standards.

3. Definitions

3.1. ICP-MS (Inductively Coupled Plasma - Mass Spectrometer): Refers to an ICP MS spectrometer or to analytical method(s) that specify the use of an ICP-MS to identify and quantify trace elements in environmental samples.

3.2. IDL (Instrument Detection Limit): The concentration equivalent to the analyte signal which is equal to three times the standard deviation of a series of 10 replicate measurements of the calibration blank signal at the selected analytical mass(es).

3.3. RL (Reporting Limit): The RL is the lowest value at which a given analyte is reported. The RL is based on the IDL, MDL, method efficiency, and analyst's judgment. The RL will, at minimum, equal the statistical MDL.

3.4. MDL (Method Detection Limit): As defined in 40 CFR Appendix E Part 136.

3.5. CRDL (Contract Required Detection Limit): Contract specified minimum level of detection.

3.6. ICV (Initial Calibration Verification): A mid-range second source standard, run immediately after calibration to verify the accuracy of the calibration.

3.7. CCV (Continuing Calibration Verification): A mid-range calibration standard, run after every group of 10 samples and at the end of an analytical sequence to verify calibration accuracy during the analytical run.

3.8. ICB (Initial Calibration Blank): A calibration blank run, immediately after the ICV to verify the baseline and to check for carry-over.

3.9. CCB (Continuing Calibration Blank): A calibration blank, run immediately after every CCV to verify the baseline and to check for carry-over.

3.10. QCS (Quality Control Sample): A QC solution supplied by a source independent from the source of the calibration standards. It is used to verify the accuracy of the newly prepared calibration standards.

3.11. IS (Internal Standard): Pure analyte(s) (which is not a sample component) added to a sample, extract, or standard solution in known amounts and used to measure the relative responses of other method analytes that are components of the same sample of solution.

3.12. LR (Linear Range): The linear range of an instrument is the upper limit of accurate quantitation with practical rinse-down times. It varies for each isotope and with instrumental conditions.

3.13. CRI (Low Check Standard): This low level standard is at 1RL.

3.14. SD: Standard Deviation

3.15. RSD (Relative Percent Standard Deviation): The SD divided by the mean, multiplied by 100.

3.16. RPD (Relative Percent Difference): The absolute difference between two numbers, divided by the average of the two numbers, multiplied by 100.

3.17. %R (Spike Percent Recovery): The difference between the matrix spike concentration and the background sample concentration divided by the concentration of the spike added multiplied by 100.

3.18. Analytical Batch: An analytical batch shall consist of no more than 20 samples.

3.19. MB (Method Blank.): An aliquot of analyte-free matrix taken through the sample preparation procedure with each analytical batch.

3.20. LCS/MBSPK (Laboratory Control Sample, or Method Blank Spike): A reference solution of known concentration processed along with the analytical batch to test the digestion procedure for accuracy. Both soil references and aqueous references (reference solutions or method blank spikes) are LCSS.

3.21. SRM (Standard Reference Material): A reference sample of known concentration processed along with the samples to test the digestion procedure for accuracy. For a soil sample the reference used is typically an ERA Soil SRM.

3.22. MS (Matrix Spike): A sample prepared by adding a known amount of analyte to a specified amount of sample matrix. Matrix spikes are used to determine the effect of the sample matrix on the method's recovery efficiency.

3.23. MSD (Matrix Spike Duplicate): A second replicate matrix spike sample prepared and analyzed as above (Sec. 3.21) to measure precision with respect to a given matrix.

3.24. MD (Matrix Duplicate): A second replicate matrix sample prepared and analyzed with a sample batch to measure precision with respect to a given matrix.

3.25. ICSA, ICSAB (Interference Check Solutions): The ICSA solution contains interfering elements, at levels often found in samples, to test the efficacy of instrument correction equations. The ICSAB solution contains the same elements as the ICSA at the same concentrations, plus analytes at moderate levels to test the accuracy of analyte measurement in the presence of interferants.

3.26. Carry-over: The effect of a high level sample on a lower level sample which follows. Residual analyte from the high level sample may remain in the uptake lines, in the nebulizer, in the spray chamber or in the torch. The lower level sample which follows may or may not show successively decreasing exposures as evidence of carry-over. A true test for carry-over is the analysis of a blank, which has either elevated analyte or successively decreasing exposures. Carry-over may also be referred to as memory effect. If carry-over is suspected, the lower level sample should be rerun following a blank, another low level sample, or an extended rinse time.

3.27. Set-up (Tuning) Solution: A solution which is used to determine acceptable instrument performance prior to calibration and sample analyses.

3.28. Stock Standard Solution: A concentrated solution containing one or more method analytes prepared in the laboratory using high purity solutions purchased from a reputable commercial source (Inorganic Ventures).

3.29. Analysis Protocols:

3.29.1. Routine or Package: Follows SW-846 6020 and EPA 200.8. If the analysis comment is Package (PKG), a data package will be generated from the Routine analytical run and Routine

QC samples. Other modifications that are necessary for certain quality assurance plans and/or agencies will be detailed in individual sections.

3.29.2. CLP-Q: Follows Routine protocol with CLP-type and DOD QC standards analyzed at CLP QC frequency, in order to generate a CLP-type data package.

4. Interferences

4.1. Isobaric interference occurs when an isotope of one element is at the same nominal mass as an isotope of another element (e.g., 98Mo and 98Ru). Corrections for isobaric interference may be made by measuring the intensity due to the interfering element at another isotope and using its natural abundance ratios to correct for its presence at the analytical mass of interest. Most commonly used corrections for isobaric interference are already present as default interference equations in the NexION® software. Care should be taken that the isotope measured for correction purposes does not suffer from overlap with other isotopes that may be present in the sample.

4.2. Molecular interferences are caused by molecular species formed in the plasma with argon plasma or matrix ions (examples of common molecular interference include ArCl, ClO, nitrogen dimer, oxygen dimer, oxide species, double charged species, etc.). Predictions about the type of molecular interference may be made using knowledge about the sample matrix. Molecular interference can often be corrected for in the same manner as isobaric interference, i.e., measuring the intensity present at another isotope and using isotope ratios to calculate the amount of the interfering species. For example, corrections for interference of $^{40}Ar^{35}Cl$ on As at mass 75 may be made by measuring the intensity of ArCl present at mass 77 ($^{40}Ar^{37}Cl$) and converting to the apparent intensity of ArCl at mass 75 by using the isotopic ratio of ^{37}Cl to ^{35}Cl. A list of the correction equations used is given in Appendix 9.

4.3. Physical interferences are associated with solution viscosity and surface tension differences between standard solutions and samples. These interferences may occur in transfer of solution to nebulizer, at the point of aerosol formation and transport to the plasma, or during the excitation and ionization process within the plasma. Internal standardization is used to compensate for many physical interference effects. Five internal standards are chosen to closely match the analytical behavior of the elements being determined.

4.4. Memory Interferences: Result when isotopes of elements in a previous sample contribute to the signals measured in a new sample (Carry-over as defined in Section. 3.26). If a memory interference is suspected, the sample should be reanalyzed after a long rinse period.

5. Safety

5.1. The use of laboratory equipment and chemicals exposes the analyst to several potential hazards. Good laboratory technique and safety practices shall be followed at all times.

5.2. Safety glasses shall be worn at all times when handling samples, reagents, or when in the vicinity of others handling these items.

5.3. Liquid argon represents a potential cryogenic hazard and safe handling procedures shall be used at all times when handling liquid argon tanks.

5.4. The NexION ICP-MS is fully interlocked to protect the user from dangers such as high voltages, radio frequency generators, and intense ultra-violet light. At no time should the operator attempt to disable these interlocks or operate the NexION if any safety interlock is known to be disabled or malfunctioning.

5.5. Spilled samples, reagents, and water shall be cleaned up from instrument and autosampler surfaces immediately.

5.6. All additional company safety practices shall be followed at all times.

6. Equipment and Supplies

6.1. Perkin-Elmer NexION ICP-MS system: includes the NexION® instrument, a peristaltic pump, a computer system, NexION® software, a printer, and an ESI FAST autosampler with Version 2.4 software.

6.2. Supplies

6.2.1. Peristaltic pump tubing:

6.2.1.1. Black/Black PVC - 0.76 mm id used for sample introduction

6.2.1.2. 1.30 mm id Gray/Gray Santoprene used for rinse solution

6.2.1.3. Orange/Green PVC – 0.38 mm id for Internal Standard

6.2.2. Calibrated mechanical pipettes with metal-free plastic pipette tips

6.2.3. 15 mL and 50 mL polypropylene metal-free auto-sampler tubes with caps

6.2.4. 100, 200, 500 and 1000 mL polyethylene volumetric flasks

6.2.5. Fast supplies: 1.0mm id Sample Probe (gray marker), Internal Standard and Carrier Solution probes (0.5mm id). Sample loop (size varies according to method). Spare valve parts including: Stator, Rotor, Valve head.

7. Reagents and Standards

7.1. Reagents

7.1.1. All reagents may contain impurities that may affect the integrity of the analytical results. Due to the high sensitivity of ICP-MS, high purity reagents, water, and acids must be used whenever possible. All acids used for this method must be of high purity grade. Nitric acid is preferred for ICP-MS in order to minimize polyatomic interference.

7.1.2. Nitric acid (HNO3), concentrated. Trace Grade HNO3 that has Lot QC documentation to verify that it is acceptable for trace metals use.

7.1.3. Hydrochloric acid (HCL), concentrated, Trace Grade HCL that has Lot QC documentation to verify that it is acceptable for trace metals use.

7.1.4. Deionized water (DI). Type I reagent water (18.3 megaohm).

7.1.5. 1% (vol/vol) nitric acid. Add 10 mL of trace grade nitric acid to a 1-liter volumetric flask containing 900 mL of DI water. Mix well and bring to volume.

7.2. Standards: All standards must be labeled with the analyst's initials, preparation date, expiration date, and standard identification number (from Element). The preparation of all standards and analytic solutions must be documented in Element. Standards are stored in the metals lab either on the standard shelves or near the point of use. All standards are marked with an expiration date derived from the expiration date of the stock from which it is made, or from method requirements.

7.2.1. Single element stock standards of the elements at the highest purity available form Inorganic Ventures. All single element standards and Intermediate Standards are checked by ICP and/or ICP-MS prior to use.

7.2.2. Setup Solution:

7.2.2.1. Setup Solution Intermediate (10 mg/L Be, Mg, Fe, In, Li6, Ce, U and Pb in 1% HNO3): Prepare by pipetting 1.0 mL of each 1000 mg/L single element stock standard into a 100 mL volumetric flask containing 90 mL DI water and 1.0 mL concentrated HNO3. Dilute to 100 mL with DI water and mix well (see Appendix 1 Section 2).

7.2.2.2. Working standard (1 □g/L Be, Mg, Fe, In, Li6, Ce, U and Pb in 1% HNO_3): Prepare by pipetting 0.10 mL of Tuning Solution Intermediate into a 1000 mL volumetric flask containing 900 mL of DI water, and 10 mL of concentrated HNO_3. Dilute to 1000 mL with DI water and mix well.

7.3. Internal Standard Solution:

7.3.1. Solution Preparation (0.15 mg/L 6Li, 0.6 mg/L Ge, 0.12 mg/L Sc; and 0.05 mg/L Y, In, Tb and 0.2 Bi): Prepare by pipetting 0.15 mL 6Li, 0.6 mL Ge, 0.12 mL Sc, and 0.05 mL each Y, In, Tb, and 0.2 mL Bi of 1000 mg/L individual stock standards into a 1000 mL volumetric flask

containing 800 mL DI water and 10 mL concentrated HNO3. Dilute to 1000 mL with DI water and mix well (see Appendix 1 Section 1).

7.3.2. Internal Standard Solution is pumped to all Standards and Samples by a “T” prior to the Nebulizer.

7.4. Calibration Standard Stocks (see Appendix 2):

7.4.1. Calibration Stock 1 - containing 100 mg/L Ag, As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, Se, Tl, Th, U, V, and Zn.

7.4.2. Calibration Stock 2 - containing 100 mg/L Mo and Sb.

7.4.3. Individual Stock Standards each containing 10,000 mg/L of Al, Ca, Fe, K, Mg, and Na

7.5. Calibration Intermediate Standard (See Appendix 3) is prepared, as needed, by adding 10.0 mL of each of the Stock Standards 1 and 2, and the individual elements of Al, Ca, Fe, K, Mg, and Na into a 100 mL volumetric flask containing 10 mL DI water and 1.0 mL of concentrated HNO3. Bring to volume with DI water and mix well.

7.6. Calibration working standards: Prepare fresh every two weeks or as needed at the specified concentrations in Appendix 4. (NOTE: The low standard is the CRI.)

7.7. QCS: The QCS, typically an ERA or NIST solution, is prepared as recommended by the supplier. It is diluted appropriately and analyzed as a sample when required (see section 15.4.1.1).

7.8. Initial Calibration Verification Standard: This is a second source calibration verification standard prepared from 2 second source stock solutions purchased from Inorganic Ventures Inc. (see Appendix 5). Prepare by pipetting 20.0 mL of AR-ICVMS-1 stock and 20.0 mL of AR-ICVMS-2 stock into a 1000 mL volumetric flask containing 900 mL of DI water, and 10 mL of concentrated HNO3. Dilute to 1000 mL with DI water and mix well.

7.9. Low Check Solution (CRI): A solution prepared at the RL for each element to check the accuracy at low levels. NOTE: CRI is also used as the first (and lowest) calibration solution.

7.9.1. Low Standard/Low Check Intermediate (see Appendix 7): Prepare by pipetting the specified amount of single element stock standard into a 100 mL volumetric flask containing 80 mL DI water and 1.0 mL concentrated HNO3. Dilute to 100 mL with DI water and mix well.

7.9.2. Low Standard/Low Check Solution (levels at 1RL): Prepare by pipetting 0.10 mL of Low Check Intermediate into a 200 mL volumetric flask containing 90 mL of DI water, and 2.0 mL of concentrated HNO3. Dilute to 200 mL with DI water and mix well.

7.10. Continuing Calibration Verification: Standard 4 (50 □g/L non-minerals and 5000 □g/L minerals), the mid-range calibration standard, is used.

7.11. Calibration Blank: A solution containing 1% (v/v) concentrated HNO3 in DI water. Fill a 1-L volumetric flask with approximately 900 mL of DI water. Pipette 10 mL of concentrated HNO3 into the flask, dilute to 1000 mL with DI water and mix well. NOTE: Cal. Blank is also used as the "carrier solution".

7.12. Dual Detector Calibration Solution: contains 50 □g/L each of Al, As, Be, K, Mg, Na, Ni, Pb, Th, Tl, U, Zn, 6Li, Sc, Ge, Y, In, Tb, Bi and 100ug/L of V, Cr, Co, Mn and 500 ug/L of Ca, Fe and 250ug/L of Mo, Ag, Cd, Cu, Sb, Ba. (see Appendix 6).

7.12.1. Dual Detector Calibration Elan Intermediate Solution 1: Prepare by adding 1.0 mL of each of the above 1000 mg/L elements into a 200 mL volumetric flask containing 150 mL DI water and 2 mL concentrated HNO_3. Dilute to 200 mL with DI water and mix well. Note: There is no need to add Se or additional internal standards to this solution.

7.12.2. Dual Detector Calibration Supplementary Elements for Nexion: Prepare by adding 0.01mL each of 1000 mg/l of V, Cr, Co, Mn and 0.09 mL of Ca, Fe, and 0.04 mL of Mo, Ag, Cd, Cu, Sb, Ba into a 200 mL volumetric flask containing 2.0 mL of Intermediate Standard 1 and 2 mL of concentrated HNO3. Dilute to 200 mL with DI water and mix well.

7.13. Interference Check Solutions (ICSA, ICSAB): These solutions are made from Inorganic Ventures multiple element stock standards (see Appendix 8). Prepare as needed.

7.13.1. ICSA: Prepare by pipetting 20.0 mL of Inorganic Ventures AR-6020ICS-OA10 stock into a 100mL volumetric flask containing 70 mL of DI water, and 1.0 mL of concentrated HNO3. Dilute to 100 mL with DI water.

7.13.2. ICSAB: Prepare by pipetting 20.0 mL of Inorganic Ventures AR-6020ICS-OA10 stock and 1.0 mL of ICP-MS ICSAB stock into a 100 mL volumetric flask containing 70 mL of DI water, and 1.0 mL of concentrated HNO_3. Dilute to 100 mL with DI water.

7.13.2.1. ICP-MS ICSAB STOCK: Prepare by pipetting 0.10 mL each of 1000mg/L stock standards Ag, As, Cd, Co, Cr, Cu, Mn, Ni, Zn into a 50 mL volumetric flask containing 20 mL of DI water and o.5 mL of concentrated HNO3. Mix well and transfer to a 60 mL clean Nalgene container.

8. Sample Collection, Preservation, Shipment and Storage

8.1. All samples should be received in appropriate collection containers and have been properly preserved by the clients.

8.2. Samples are checked for proper preservation and stored refrigerated for a maximum of 180 days prior to sample preparation.

8.3. Some samples are shared with the organic extractions and or conventionals laboratories. Sample receiving places these samples in a share bin in Refrigerator 5. SOP 1019S includes procedures for handling shared samples.

9. Quality Control

9.1. Documentation

9.1.1. Instrument logbooks

9.1.1.1. Daily analysis: The ICP-MS Sample logbook shall be used as a run sequence log, for sample specific notes, for QC limit notes, and for any notes pertaining to the run.

9.1.1.2. Maintenance logbook: Shall be used for notes of periodic checks of instrument performance and of all maintenance procedures including physical changes (tubing, cones etc.) and operational maintenance routines (i.e. Dual Detector Calibrations)

9.1.2. ICP-MS Files

9.1.2.1. Daily Tuning, Performance, and AutoLens® results are filed daily.

9.1.2.2. Dual detector summary results are filed with that days Tuning, Performance and Autolens.

9.1.2.3. Standard Certificates: Contains a Certificate of Analysis for all Inorganic Venture Standards as well as standards obtained from other sources.

9.2. Calibration Standards: All standards are prepared every two weeks (or as needed) by dilution from known intermediates and verified by the analysis of certified second-source QC standards (Section 7.4-7.6).

9.2.1. Calibration verification must be performed immediately after calibration with an Initial Calibration Verification Standard (ICV) and after every 10 samples and at the end of the analytical run with a Continuing Calibration Verification Standard (CCV). The ICV is made from a source other than that used for the preparation of the standard curve. The CCV is the mid-range Calibration Standard.

9.2.2. Calibration Verification Blanks (ICB/CCB) are analyzed to confirm the absence of blank contamination, baseline drift and/or carryover. Immediately after the ICV and every CCV a Calibration Verification Blank must be run.

9.2.3. Independent QC solutions: This standard is used to check the calibration stock standards stability, concentrations, and preparation. They are analyzed on the day new calibration standards are prepared.

9.3. Low Check (CRI) Standard is analyzed following calibration verification for each element. The standard is used to verify the analytical performance at the low end of the calibration or reporting limit.

9.4. Interference Check Solutions (ICSA/B) The interference check solutions (See Appendix 8) are analyzed to check the accuracy of correction equations. These standards are analyzed after the Low Check Standard.

9.5. Serial Dilution: A five-fold dilution should be performed on any new or unusual sample matrix. This dilution test will help identify a matrix interference if one is present. The dilution is performed on a sample, typically the sample used for matrix QC, from each group of samples of a similar prepcode for each sample digestion batch. Some projects (including DOD, CLP-Q) require a serial dilution be performed on at least one sample in their batch.

9.6. Post Digestion Spike: A post digestion spike should be performed on a new or unusual sample matrix, along with the serial dilution. This sample is intended to help identify matrix interference problems. Some projects, including DOD, require that a post digestion spike be performed on at least one sample in their batch. For CLP type samples this spike is required only for elements that are outside control limits in the Matrix Spike sample. For DOD samples all requested elements must be spiked.

9.7. Matrix QC samples: With each preparation batch various matrix QC samples must be analyzed. At a minimum a matrix spike, matrix duplicate, method blank, and a laboratory control sample should be prepared and analyzed. For some projects matrix spike duplicates, laboratory control sample duplicates, and/or certified reference materials may also be required. The analyst must check all paper work to make sure all necessary QC samples have been prepared and analyzed.

9.8. All logbooks are reviewed monthly for completeness and accuracy by laboratory personnel.

9.9. The QA section will periodically review the standard preparation process, including standard bottles, logbooks, standard certificates and traceability to standardized sources.

9.10. Initial Demonstration of Laboratory Performance - The following items must be completed before the analysis of any samples is performed by using this method

9.10.1. Instrument Detection Limits (IDLs) shall be determined for all analytes when first putting an instrument into service, and before using this method.

9.10.1.1. IDLs shall be verified following any significant change to the instrument (new detector or different sample introduction system used).

9.10.1.2. Calibrate the instrument, and then run the usual QC sample sequence.

9.10.1.3. Run the blank solution as a series of 10 sequential samples with rinsing in between each sample.

9.10.1.4. Calculate the standard deviation of the 10 blank samples for each isotope.

9.10.2. Method detection limits (MDLs) shall be established for all analytes by the method outlined in 40 CFR Part 136 at least annually. An MDL check sample must be run on a routine basis to verify detection limits. The check sample is run at ½ the RL.

9.10.2.1. Fortify a reagent blank with a concentration of each analyte that is two to five times the estimated detection limit (the IDL can be used to estimate this). This solution is called the MDL solution.

9.10.2.2. Take eight replicate aliquots of this solution and process through the entire method, including any sample preparation steps. Run these as samples with rinsing between each sample. Calculate the standard deviation of the samples for each isotope. Multiply the standard deviation by 2.998 (student's t value for 99% confidence level and n=8) to obtain the MDL.

9.10.2.3. The MDLs must be lower than in-house RLs. If not, the RLs will need to be changed or the MDL analysis redone.

9.10.2.4. MDLs shall be re-determined annually or following any change to the sample preparation procedure.

9.10.3. Run four LCS or SRM standards and verify the mean concentration is within 10% of the stated value (or within the acceptance limits listed in Table 8 Revision 5.4 EPA METHOD 200.8).

10. Calibration and Standardization

10.1. The instrument must be calibrated using a blank and 4-5 calibration standards before analysis. The high concentration standard will contain 100 □g/L of all analytes except for the minerals at a concentration of 5,000 or 10,000 μg/L.

10.1.1. The concentrations of the standards have been entered into the calibration page of the analytical method in the NexION® software according to the values of the standards prepared in Section 7.6.

10.1.2. Positions of the Standards are entered in the Sampling page of the Method along with any special rinse times needed.

10.1.2.1. A "Linear Through Zero" curve type should be selected for all analytes.

10.1.2.2. The calibration blank should be run as a blank, before the analysis of any calibration standards.

10.1.2.3. The first standard run should be the lowest level standard, followed by standards of increasing concentration in order to minimize cross-contamination and carry-over.

10.2. Load the calibration blank and the calibration standards into the autosampler positions specified on the Sampling page of the analytical method.

10.2.1. Start calibration in the Samples Table by highlighting the 1st row of the batch labeled "Rinse Sample" with calibration action "Run Blank, Standards, and Samples". Click on Analyze Batch. Click on Yes to clear the previous calibration.

10.2.2. After calibration has run review the data for acceptable RSDs and internal standard recoveries (see Section 15). View the curve-fit on the Calibration View page for poor curve fit (apparent standard levels >5% from true value), then print a calibration summary. To print a calibration summary, click on the Report page, and under Report View, Report Options Template select arical.rop. Then click on the Dataset Icon, highlight the latest calibration standard row and click on Reprocess. Save the calibration with the name of that run i.e. yymmdd and A, B… for the 1st, 2nd, etc. calibration if re-calibration is necessary.

10.2.3. Review the r-values for any that are <0.998

10.2.4. If poor curve fit and/or poor r-value are found, rerun a standard or recalibrate (also see Section 1.1). To reset the usual report options template, click on the Report page, and under Report View, Report Options Template select ariquant.rop.

10.3. Analyze Required QC Samples

10.3.1. Analyze the ICV and ICB standards. Confirm the standard recovery is within 10% of the known value, and the ICB value is less than the RL (unless analyzing DOD samples, when the CB value must be less than 2X MDL). If these conditions are not satisfied the analysis must stop, the problem corrected, the instrument recalibrated and the Initial Standards rerun.

10.3.2. Analyze Low Check Standard (CRI). Confirm the standard is within 50% of the known value (20% for DOD), else the problem must be corrected and the CRI run within limits before samples may be analyzed.

10.3.3. Analyze ICSA/B Standards. Confirm the standards return values of less than the RL for all non-spiked elements (unless contamination can be documented), and within 20% of the known value for spiked analytes. (For DOD the absolute value for all non-spiked analytes shall be <2XMDL, unless a verified trace impurity from one of the spiked analytes exists.)

10.3.4. Analyze the independent QC solution(s) if fresh calibration standards were prepared on this day. This standard serves as an additional check of the calibration solutions. The concentrations should be within the certified limit range provided by the supplier. If the results

are outside this range, the analyst should compare the percentages to the nearest CV and rerun the QC solution, recalibrate, or prepare new calibration standard(s).

11. Procedure

11.1. Initial Demonstration of Laboratory Performance: The following items must be completed before the analysis of any samples is performed using this method.

11.1.1. Instrument Detection Limits (IDLs) shall be determined for all analytes when first putting an instrument into service, and before using this method.

11.1.1.1. IDLs shall be verified following any significant change to the instrument (new detector or different sample introduction system used).

11.1.1.2. Calibrate the instrument, and then run the usual QC sample sequence.

11.1.1.3. Run the blank solution as a series of 10 sequential samples with rinsing in between each sample.

11.1.1.4. Calculate the standard deviation of the 10 blank samples for each isotope.

11.1.1.5. IDLs shall be determined whenever there is any significant change to the instrument (i.e. new detector or a different sample introduction system used)

11.1.2. Method detection limits (MDLs) shall be established for all analytes by the method outlined in 40 CFR Part 136, at least annually.

11.1.2.1. Fortify a reagent blank with a concentration of each analyte that is two to five times the estimated detection limit (the IDL can be used to estimate this). This solution is called the MDL solution.

11.1.2.2. Take eight replicate aliquots of this solution and process through the entire method including sample preparation steps. Run these as samples with rinsing between each sample. The resulting values are entered into the spread sheet for MDL calculations. Following the MDL determination an MDL verification check sample may be run (spiked at approximately 2XMDL). The MDL check must produce a response at least 3X instrument noise level.

11.1.2.3. The MDLs must be lower than the in-house RLs. If not, the RLs will need to be changed or the MDL analysis redone.

11.1.2.4. MDLs shall be re-determined whenever there is any change to the sample preparation procedure.

11.1.3. Linear Range Verification: Linear range limits are determined during the methods development period. Many of them are set below instrument capability, limited by other concerns such as carry-over and rinse-out times. Linear Limits used are verified on an on-

going basis and at least every six months. Linear Range standards (LR200, LR300) are analyzed to verify each element is within 10% of expected value and results may be reported to that level.

11.2. Daily Procedure

11.2.1. Preparing the uptake system and interface

11.2.1.1. Open the instrument cover and slide the torch mount door away from the Interface using the button on the outside of the instrument. Check the condition of the cones for deposits and wipe the sampler cone with a Kimwipe® wetted with a small amount of DI water. When deposits are severe, change or clean the cones.

11.2.1.2. Attach the three pump tubings to the peristaltic pump: Black-black tubing for the sample line, gray-gray for the spray chamber drain line and Green/Orange tubing for the Internal Standard. Make sure the tubing is not flattened, or else change to new tubing for optimum performance. Place the I.S. probe (green tape) and the Carrier probe (blue tape) in a DI container.

11.2.1.3. Initiate the plasma and place the I.S. and Carrier probes into a 1% HNO3 rinse solution and allow a warm-up of at least 45 minutes. Ensure that the spray chamber is pumping out smoothly. Turn on the Peltier Cooling for the Spray chamber.

11.2.2. Open the **ariDaily.wrk** workspace to perform the tuning. Check the active folders and dataset in use for accuracy. (Month and Year can be used for the Dataset Name.)

11.2.2.1. Manually aspirate (without the autosampler) the 1 μg/L Tuning solution by placing the Internal Standard and Carrier Solution probes in the solution. This solution will be continuously aspirated for the torch alignment, tuning, the AutoLens® calibration and the daily performance checks. **Prior to Tuning and Autolens routines it is helpful to run a Daily performance to check for adequate element intensities.**

11.2.3. Right Click the Daily Performance button to perform the daily performance check.

11.2.3.1. Continue to aspirate the 1 μg/L tuning solution.

11.2.3.2. Click on the Analyze Sample button in Sample window to start analysis.

11.2.3.3. Check that the RSDs for five replicates for Be, In, Mg, Pb and U are all ≤5% as required by EPA Methods 6020 and 200.8 (typically all are <3%).

11.2.3.4. Monitor the daily performance measures (as recommended by Perkin Elmer) of Be, Mg, In, and U, sensitivity, background, % double charged and % oxide levels: Be at >3000cps, Mg at >20,000cps, In at >50,000 cps, Pb >20,000cps, and U at >30,000cps . If the element intensities are low the Nebulizer Flow rate can be increased. (see 11.2.7.3).

11.2.3.4.1. Background at mass 220 < 30 cps

11.2.3.4.2. Ce +2 <0.025 (% double charged < 2.5%)

11.2.3.4.3. CeO <0.03 (% oxides < 3%)

11.2.4. Right click on Torch Alignment. Record the x and y results.

11.2.5. Right Click on the Calibration and Resolution button in the Smartune window.

11.2.5.1. After the tuning solution has run, a tuning report for each of the tunings performed will be automatically sent to the printer. Check that the mass calibration for each of the measured masses is ± 0.05 AMU of the true mass. Methods 6020 and 200.8 require ± 0.1 AMU.

11.2.5.2. Check that the resolution for all elements is 0.7 ± 0.03 AMU (measured at 10 % peak height). EPA Method 6020 requires <0.9 amu at 10% peak height; Method 200.8 requires 0.75 amu at 5% peak height.

11.2.5.3. . If both the resolution and mass calibration are acceptable a report of acceptability will be automatically printed.

11.2.5.4. If any of the tuning parameters are not meeting method specifications and the instrument requires adjustment, the instrument will automatically rerun the tuning routine (# of Retries can be set in the method) see the NexION Software Manual. It is typical to run several tunings to get all 5 elements within specifications.

11.2.6. Right Click on the **Autolens** button to perform the AutoLens® calibration.

11.2.6.1. Continue to aspirate the 1 µg/L Set-up solution.

11.2.6.2. Print an Interactive Graph (add all elements) and save the AutoLens® Calibration.

11.2.6.3. Review the AutoLens® calibration graphs.

11.2.7. Right Click the Daily Performance button to perform the daily performance check.

11.2.7.1. Continue to aspirate the 1 µg/L Set-up solution.

11.2.7.2. Check that the RSDs for five replicates for Be, In, Mg, Pb and U are all ≤5% as required by EPA Methods 6020 and 200.8 (typically all are <3%).

11.2.7.3. Monitor the daily performance measures (as recommended by Perkin Elmer) of Be, Mg, In, Pb and U sensitivity, background, % double charged and % oxide levels:

11.2.7.3.1. Be at >3000 cps, Mg at > 20,000 cps, In at > 50,000 cps, Pb at >20,000cps, and U at > 40,000 cps.

11.2.7.3.2. Background at mass 220 < 30 cps

11.2.7.3.3. Ce +2 <0.025 (% double charged < 2.5%)

11.2.7.3.4. CeO <0.03 (% oxides < 3%)

11.2.7.3.5. Oxides and double charged levels can be reduced by slightly decreasing the nebulizer flow rate or increased by slightly increasing the nebulizer flow rate. To adjust the flow, click on the Conditions Icon, Manual Adjust, and then adjust the nebulizer gas flow arrows: try using 0.01-0.02 increments to adjust Ce +2 and CeO levels. Alternately the Nebulizer adjust routine can be added to the optimization window and will automatically set the Gas flow.

11.2.7.3.6. Other Optimization Routines are available in the SmartTune window by clicking on the Edit button.

11.2.7.3.7. After the Optimizations have been run place the probes in the Rinse container for 5-10 minutes. And then Place the Carrier Probe (Blue tape) and the I.S. probe (Green tape) in the appropriate solutions.

11.3. Sample Analysis

11.3.1. Open the ARIQuant workspace and load the applicable method for the analytes required (see the method list at the instrument). In the Method window, click on the Report page. Change the report filename to reflect the run date m2yymmdd.rep, where m2 is the analysis method and instrument, yy are the last 2 digits of the year, mm is the month and dd is the day of the month). Save the method file.

11.3.2. New sample types can be screened by ICP or the semi-quantitative ICP-MS procedure, Total Quant. Use the report TotalQuantSummary.rop. To screen a sample using Total Quant, first open the TotalQuantAnalysis.wrk workspace. Calibrate using the 1% HNO3 diluent as the calibration blank and standard 50 µg/L non-minerals and 5000 µg/L minerals) as the single calibration standard. Run an ICV and an ICB before running samples at an appropriate dilution; new sample types are diluted at least 1/10, more dilute (1/50 or 1/100) if warranted.

11.3.3. Samples Analysis Setup

11.3.3.1. Edit the Samples window to enter new samples in the autosampler sequence.

11.3.3.2. The starting sample sequence is ICV, ICB, CCV1, CCB1, Low Check, ICSA, ICSAB, CCV2, CCB2 and then 10 client samples. 10 samples can be run between CCV/CCB pairs (Low Check, ICSA and ICSAB count as samples). Run the QCS (if necessary) early in the run. Linear range checks, LR200 and LR300, can be run any time after the Low Check, ICSA, ICSAB group. Enter the autosampler sample position in the A/S Loc column. Enter the dilution factor in the Batch ID column. REN and RHN preps are run undiluted. SWN preps are diluted 1/20. Enter the sample identification in the Sample ID column (e.g. 16A0001-01). The calibration action for all samples is “Analyze Sample”.

11.3.3.3. In the Method under the samples tab enter peristaltic pump control speeds for all samples: -3 for normal speed. Enter the number of seconds required for sample flush, read delay and wash.

11.3.3.4. Check the autosampler positions.

11.3.3.5. Rinse 15ml metals free tubes in groups of six. Rinse with 10% Nitric Acid followed by Di. Prepare the sample dilutions according to sample prep method and knowledge of sample analyte levels. Mix the samples using the small vortex mixer.

11.3.3.6. Load the samples into the autosampler positions specified in the sample table. Save the sample file.

11.3.3.7. Select the samples to be analyzed by highlighting the rows.

11.3.3.8. Click on Analyze Batch. A Pop-up window will ask if you wish to clear the current calibration – Click on NO unless you wish to recalibrate. Click on Yes will clear the current calibration).

11.3.4. During the run, the instrument condition and sample results are monitored so appropriate actions can be performed as needed. The CVs, CBs, QC solutions, Linear Range standards, MBs, LCSs, duplicates, matrix spikes, and internal standard recoveries should be checked during the run or soon thereafter. See Section 15 for acceptance criteria.

11.3.5. Analytical Run Order

11.3.5.1. Routine: After acceptable initial QC has been run, every group of 10 samples must be preceded and followed by a CCV, CCB pair. Typically, each group of ten may be started with suspected low level samples, such as matrix blanks and ending with higher level samples such as reference materials, or matrix spikes. In order to facilitate acceptance limit checking samples may be run: matrix duplicate, background sample, matrix spike, reference sample.

11.3.5.2. CLP-Q/DOD The analytical run order is as above plus: a serial-dilution (a fivefold dilution must agree within 10% of the undiluted sample if the analyte levels are >10RL. A post-digestion spike is performed on DOD/CLP-Q samples with recovery outside 75-125% of the expected result.

11.3.6. Monitoring the Analysis

11.3.6.1. Periodically during the run check the sample uptake flow, the level of solution in the autosampler QC vials, the autosampler probe position and the rinse bottle level. To stop the run, click on “Stop” (to stop immediately) or ‘Stop after current sample. To pause the run after the current sample click the “Pause” button in the Run window.

11.3.6.2. Method QC samples such as CV/CB should be monitored closely during the analytical run to check for calibration stability and baseline drift. If the CV and/or the CB are outside or approaching the QC limits, then corrective action should be taken as soon as possible to minimize sample reruns. Corrective action could include recalibrating the Blank or extra rinsing time followed by another CV and CB.

11.3.6.3. Monitoring High Levels and Carryover: If any sample level is above 10% of the linear limit, the sample should be diluted and rerun for the affected element. If high level samples are analyzed, carryover into the following samples may occur. Carryover usually exhibits high SD or RSD in the following samples. If carryover is suspected the affected sample should be reanalyzed. Note: Some projects (including DOD) require any sample analyte that exceeds the concentration of the high calibration standard be diluted. If required, appropriate instructions will be noted in Element and it is the analyst's responsibility to follow the instructions and document the necessary dilutions on the raw data.

11.3.7. Recalibrating the Calibration Blank: (It is possible to recalibrate the Blank and re-set the internal standards during a run):

11.3.7.1. Stop the run and insert a CV/CB pair in the AS table

11.3.7.2. Right click on the Analyze sample option in the sample table. Choose Run Blank and Sample option. This will insert a Calibration Blank in the Run table. After the blank and CV/CB pair has run return to the Batch Sample Mode. Any recalibration of the Blank must be followed by a CV/CB within QC limits before samples may be run.

11.3.8. Shut Down

11.3.8.1. Run 5% HNO3 for 3 or 4 times, and then run DI water for 3 or 4 times. Move the probes to air to drain the uptake lines and the spray chamber. When the spray chamber drain line is empty, extinguish the plasma. Loosen the peristaltic pump tubing and turn off the spray chamber cooling

11.3.8.2. Auto-shutdown (unattended shutdown) requires adding two or more 5% HNO3 samples (use autosampler position 9) and two or more DI water samples (use autosampler position 10) to the last autosampler sequence. In the Run List window, click on Auto Stop to set shutdown after run is complete. Start the autosampler batch. On the following workday, run the peristaltic pump to completely drain the uptake lines and the spray chamber, then loosen the pump tubing. Allow the pump tubing to relax for at least 1 hour. Alternatively, the tubing can be removed and saved in a bag labeled as "used" and new tubing installed.

12. Data Analysis and Calculations

12.1. Data Entry

12.1.1. To transfer the data file: On the desktop, double click on the Report Output folder. Highlight the filename and drag it to the desired folder (i.e. Element).

12.1.2. To archive raw data files: Every few runs, move the raw sample files (except those from the most recent run) from the C drive the sub-directory Dataset\Default to the "annual" Archive. On the desktop, double click on the Default folder. Highlight the files and drag them to the "annual" folder.

13. Method Performance

13.1. MDL studies are performed for all analytes as described in Section 9.11.

13.2. The MDLs must be lower than in-house RLs. If not, the RLs will need to be changed or the MDL study replicated.

13.3. MDLs shall be re-determined following any change to the sample preparation procedure.

13.4. Analytical accuracy is determined using LCS/MBSPK, SRM or MS analyzes. Acceptance limits for spike recovery are specified in the analytical methods and are normally 80 to 120% for LCS and 75 to 125% for matrix spikes. Acceptance limits for SRM analyzes are determined by the SRM supplier or manufacturer.

13.5. Laboratory precision is measured by performing replicate analyzes. Replicates (sample or matrix spike) acceptance limits are ± 20%.

13.6. Accuracy and precision acceptance limits are disseminated to the bench chemists and LIMS administrator for use in monitoring method performance in real time.

14. Pollution Prevention

14.1. All acidified sample waste must first be neutralized prior to sink disposal.

14.2. Dispose of expired standards into the designated barrel in the hazardous waste room.

14.3. Samples that are designated as hazardous waste by the LIMS "Hazardous Report" must be placed in the designated drum in the Hazardous Waste Storage Area when they are disposed. This process is described in SOP 1003S.

15. Data Assessment and Acceptance Criteria for Quality Control Measures

15.1. Precision Criteria: Intensity RSDs should be ≤5% for concentrations ≥10RLs, Conc. SD ≤1RL for concentrations <10RLs. If a sample has poor precision (RSD or a SD outside these limits), rerun the sample. If the RSDs or SDs are still outside the limits, then the sample may need to be rerun at dilution (if no instrumental precision problems are suspected).

15.2. Internal Standard Responses

15.2.1. The internal standard intensities for all internal standards used will be monitored and compared to the intensity in the most recently run calibration blank.

15.2.2. The intensities of the internal standards in all samples, QC, and continuing calibration checks should be 60-125% of the original response in the calibration blank. If the responses are not within the limits, rinse for 10-15 minutes, then run a CCB to check the intensities of the internal standards in the blank. If the intensities are now close to the intensities of the internal standards in the original calibration blank, dilute the sample by a factor of 2 to 5, and reanalyze.

15.3. Isotope Selection:

15.3.1. Look for significant differences (>2% for concentrations ≥50RLs, or >1RL for concentrations <50RLs) between isotopes on those elements which have multiple isotopes. If the difference is significant, choose the isotope with the lowest concentration.

15.3.2. If As or Se is required, evaluate the difference between ^{78}Se and ^{82}Se. If ^{82}Se is significantly higher (≥ 2RL) than ^{78}Se, bromide interference is indicated, and ^{78}Se must be used. ^{78}Se is noisier and more susceptible to baseline drift than ^{82}Se; watch the precision and the baseline checks. When ^{82}Se is used, report the As#1 result (1st As value listed) which has an ^{82}Se correction equation. When ^{78}Se is used, report the As#2 result (2nd As value listed) which has an ^{78}Se correction equation.

15.3.3. V#1 (1st V value listed) has a ^{52}Cr and ^{53}Cr correction equation. V#2 (2nd V value listed) has no corrections; this is for informational purposes only.

15.3.4. Highlight the raw data for the acceptable values of the requested elements. If an isotope other than the first one listed is chosen, make a dash with highlighter pen into the margin to the left of isotope.

15.3.5. For indications of possible interference, refer to the interference information in the Equations window of the method.

15.4. QC Samples Review

15.4.1. Method QC Solutions:

15.4.1.1.1. QCS analysis should be performed when new standards are prepared to verify the accuracy of the calibration standards.

15.4.1.1.1.1. Whenever the QCS is analyzed the results should be within the certified QC range. If the limits are not met, rerun the QCS. If the limits are still not met, re-preparation of standards and/or recalibration may be indicated. Notify the supervisor of QCS problems.

15.4.1.2. Calibration Verifications (ICV, CCV): Calibration verification QC samples are run to verify calibration stability. The ICV is run immediately after calibration and the CCV is run before and after groups of up to 10 samples. Both ICV and CCV readings should be ±10% of the true value for all requested elements for each isotope used. If this limit is not met, recalibrate and rerun the samples; or rinsing (10-15 minutes) may correct a matrix carry-over effect, followed by rerunning the CCV, CCB, and the affected samples.

15.4.1.3. Calibration Blanks (ICB, CCB): Calibration blanks are run after every ICV or CCV to verify baseline stability and to check for carry-over. Both ICB and CCB readings should be <1RL (DOD projects require that no analyte is detected >2 x MDL). If this limit is not met, recalibrate the blank, rerun the CCV, CCB, and then rerun the samples that were not bracketed by in-control blanks. Rinsing (5-10 minutes) before recalibrating the blank may correct a carry-over effect.

15.4.1.4. Interference Check Solutions: The interference check solutions, ICSA and ICSAB, are run near the start of the run. See Appendix 8 for the concentrations of these solutions.

15.4.1.4.1. ICSA: The ICSA contains the following interferants: Al, C, Ca, Cl, Fe, K, Mg, Mo, Na, P, S, and Ti. The interferants which are analyzed should be ±20% of true values. The analyte (analytes which are spiked in the ICSAB) concentrations should typically run ±2RL, although no QC limits are used. DOD requires the absolute value of all non-spiked analytes to be <2 X MDL (unless they are a verified trace impurity from one of the spiked analytes.

15.4.1.4.2. ICSAB: The ICSAB solution contains the same interferants as the ICSA at the same levels, plus some commonly requested analytes. These analytes are Ag, As, Cd, Co, Cr, Cu, Mn, Ni, and Zn; they are all at 20 µg/L in the ICSAB solution. Both the interferants which are analyzed and the analytes should be ±20% of true values.

15.4.1.5. Low Check Standard: This low level standard verifies the accuracy of the instrument at the RL for all analytes. The limits are ±1/2 RL. DOD requires limits within 20% of the expected value. If the concentrations are outside this range, the analyst should look for the possible cause (e.g. calibration blank intensities too high, baseline drift, contamination, etc.). Re-preparation of the blank, recalibration of the blank, or rinsing the instrument may be required.

15.4.1.6. Linear Range Solutions: The linear range of an instrument for an isotope is the upper limit of accurate quantitation with practical rinse-down times. It varies for each isotope and with instrumental conditions. Two LR solutions can be analyzed on a daily basis if the

samples are expected or found to be above the calibration range. LR200 (200 □g/L non-minerals, 20,000 □g/L minerals) and LR300 (300 □g/L non-minerals, 30,000 □g/L minerals) are the linear range solutions. The LR solution concentration must be within 10% of the true value to extend the calibration range of that isotope. DOD requires samples to be diluted and reanalyzed (if possible) to bring them within the calibration curve.

15.4.2. Digestion / Batch QC Samples

15.4.2.1. Method Blank (MB/BLK): A method blank (MB) should be run with every client batch of samples or every CLP sample delivery group (SDG). A minimum of one MB must be run for every batch of 20 samples of the same matrix. For solid matrix DOD projects, add Teflon boiling chips.

15.4.2.2. MB values greater than the RL indicate laboratory or reagent contamination.

15.4.2.3. The method blank concentration should be <1RL for all requested elements. If a requested element is detected in the method blank ≥RL, then all the associated samples need to be re-digested and reanalyzed unless all samples are > 10 times the detected method blank concentration. The analyst should fill out a corrective action form and the supervisor should be informed.

15.4.2.4. Reference Sample or Method Blank Spike / Blank Spike (REF / MBSPK / BS)

15.4.2.4.1. One REF or MBSPK/BS (of the same matrix type as the samples), should be analyzed with each batch of samples of the same preparation procedure.

15.4.2.4.2. For an aqueous MBSPK/BS or REF, the quality control sample must be carried through all the procedures with which the samples are subjected. The MBSPK is prepared by spiking an aliquot of the method blank at the appropriate levels. The REF sample is prepared by diluting a QC standard to the appropriate levels.

15.4.2.4.3. The percent recovery for an aqueous LCS is calculated according to the following:

$$\%R = \frac{LCS}{s} * 100$$

Where:

%R: Percent Recovery

LCS: LCS, REF, or MBSPK Results

s: True concentration

15.4.2.4.4. The Percent Recovery for the aqueous REF sample or MBSPK should be within the required control limits of 80-120% (85-115% for Method 200.8). If the recovery is

outside the QC limits, then the source of the problem shall be identified and resolved before re-preparation of the sample batch. The analyst should fill out a corrective action form, and the supervisor should be informed.

15.4.2.4.5. For a soil reference, typically an ERA SRM, the certified ranges are used as recovery limits, though a client may specify other statistical limits. The reference sample concentration must be calculated in mg/kg units. If the recovery is outside the certified range, then the source of the problem shall be identified and resolved before re-preparation of the sample batch. The analyst should fill out a corrective action form, and the supervisor should be informed.

15.4.2.5. Matrix Spike/Matrix Spike Duplicate.

15.4.2.5.1. . A matrix spike should be run with every client batch of samples or every CLP sample delivery group (SDG). The laboratory must spike a known amount of analyte into a minimum of one sample per batch not to exceed 20 samples. DOD requires an MS/MSD for each batch of 20 samples.

15.4.2.5.2. Calculate the percent recovery for the matrix spike as follows:

$$\%R = \frac{C_s - C}{s} * 100$$

Where:

%R: Percent Recovery

Cs: Measured concentration in fortified sample matrix

C: Measured concentration in unfortified sample

s: Amount of analyte added to sample matrix

15.4.2.5.3. The recovery of the matrix spike should be within the designated QC limits of 75-125%. If it is not within this range, and the LCS recovery is acceptable, the data user will be informed that the result in the unfortified sample is suspect due to heterogeneity or an uncorrected interference effect. Recovery calculations are not required if the concentration of the analyte added is <25% of the analyte present in the sample. If the matrix spike %R is outside the QC limits, the analyst should fill out a corrective action form and the supervisor should be informed. For DOD spike recovery acceptance criteria is 85-115%. Also, DOD requires a post digestion spike for out of control analytes.

15.4.2.6. Laboratory Duplicate

15.4.2.6.1. A laboratory duplicate should be run with every client batch of samples or every CLP sample delivery group (SDG). There must be at least one laboratory duplicate prepared with each batch of samples not to exceed 20 samples.

15.4.2.6.2. Calculate the RPD as follows:

$$RPD = \frac{D_1 - D_2}{(D_1 + D_2)/2} * 100$$

Where:

RPD: Relative Percent Difference

D1: Measured concentration of first sample

D2: Measured concentration of replicate sample

15.4.2.6.3. A control limit of ≤20% shall be used for the RPD if the sample concentration is ≥5RL. A control limit of ±1RL shall be used if either the sample or the duplicate sample concentration is <5RL. If it is not within this range, the analyst should fill out a corrective action form and the supervisor should be informed. The project manager will be informed of the poor duplication, and project specific corrective action will be taken.

16. Contingencies for Handling Out-of-Control or Unacceptable Data

16.1. Calibration: If the calibration does not meet the criteria in Section 11.3.3.2, then corrective action shall be taken before proceeding with recalibration. This could involve uptake rate optimization, clog removal, re-preparation of calibration standards, etc.

16.2. Instrumental QC checks: If an instrumental QC sample (CV, CB, QCS, etc.) is out of control, then corrective action shall be taken before proceeding with analysis. This could involve recalibration of the blank (resetting the baseline), re-preparation of calibration standards and recalibration, analysis of an alternate QCS, etc.

16.3. Instrument malfunctions: When instrument malfunctions occur, consult with other experienced ICP-MS operators or the supervisor for guidance. The maintenance logbook, the ICP-MS hardware manual, or the ICP-MS software manual could be helpful for troubleshooting.

16.4. In the event of significant QC failure, analysis will stop and the analyst will perform corrective action as discussed above. In general, out-of-control sample results will not be reported. Reruns will be conducted based on sample availability. If insufficient sample remains, the client will be notified to determine an appropriate course of action.

17. Waste Management

17.1. Metals analysis results in the generation of two waste streams which must be given special treatment.

17.1.1. Acidic solutions having pH <2 and little or no trace metal concentrations: These should be neutralized to pH 7 and then sink discharged. A log book for Elementary Neutralization Activities is available in the Neutralization Area of the Lab. The Date, Source, Volume, Initial and Final pH, and Analyst initials should be recorded each time waste is neutralized.

17.1.2. Samples and sample preparation solutions having pH <2 and Hazardous levels of trace metals. A list of such samples is computer generated from sample analysis data. This list is used to mark all samples and sample solutions requiring segregation and disposal as Hazardous Waste. All such wastes are collected in a polyethylene satellite container in the Metals Instrument Lab or in the Metals Waste Drum in the Hazardous Waste Accumulation site. When the containers are full the Hazardous Materials Coordinator is notified for offsite disposal.

18. Method References

18.1. “Methods for the Determination of Metals in Environmental Samples - Supplement 1”, “Method 200.8 Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma – Mass Spectrometry”, Revision 5.5, EPA-600/R-94-111, May 1998.

18.2. NexION Hardware Manual, 2011, Perkin-Elmer Corporation

18.3. NexION ICP-MS Software Manual, 2011, Perkin-Elmer Corporation

18.4. EPA SW-846 “Method 6020A Inductively Coupled Plasma – Mass Spectrometry”, Revision 1, Feb. 2007

19. Appendices

19.1. Appendix 1: Internal Standards and Tuning Solutions

19.2. Appendix 2: Calibration Stocks

19.3. Appendix 3: Calibration Intermediate

19.4. Appendix 4: Calibration Standards and Linear Range Solutions

19.5. Appendix 5: Inorganic Ventures ICV

19.6. Appendix 6: Dual Detector Solution

19.7. Appendix 7: Low Check Solution

19.8. Appendix 8: Interference Check Solutions (ICSA, ICSAB)

19.9. Appendix 9: Interference Correction Equations

19.10. Appendix 10: Analytical Isotopes and Additional Monitored Isotopes

19.11. Appendix 11: ICP-MS Reporting Limits

19.12. Appendix 12: Troubleshooting

19.13. Appendix 13: Instrument Maintenance

Appendix 1

ICP-MS INTERNAL STANDARDS AND TUNING SOLUTIONS

All concentrations in mg/L

1. INTERNAL STANDARD SOLUTION

Use at 1/100 for final levels, all concentrations in mg/L

ELEMENT	STOCK CONC	VOL OF STK IN 1000 ml	FINAL CONC in 1% HNO_3
^{6}Li	1000	0.15	0.15
Sc	1000	0.12	0.120
Ge	1000	0.6	0.600
Y	1000	0.05	0.050
In	1000	0.05	0.050
Tb	1000	0.05	0.050
Bi	1000	0.2	0.200

2. SETUP SOLUTION

Use at 1/100 for final levels, all concentrations in mg/L

ELEMENT	STOCK CONC	VOL OF STK IN 100 ml	INT CONC	FINAL CONC in 1% HNO_3
Be	1000	0.10	1.0	0.001
Mg	1000	0.10	1.0	0.001
Fe	1000	0.10	1.0	0.001
In	1000	0.10	1.0	0.001
Li	1000	0.10	1.0	0.001
Ce	1000	0.10	1.0	0.001
U	1000	0.10	1.0	0.001
Pb	1000	0.10	1.0	0.001

Appendix 2

ICP-MS CALIBRATION STOCKS

STOCK #1

Prepare in 1% trace grade HNO_3. All concentrations in mg/L

ELEMENT	STOCK CONC	VOL OF STD IN 100 mL	STOCK CONC
Ag	10000	1.0	100
As	10000	1.0	100
Ba	10000	1.0	100
Be	10000	1.0	100
Cd	10000	1.0	100
Co	10000	1.0	100
Cr	10000	1.0	100
Cu	10000	1.0	100
Mn	10000	1.0	100
Ni	10000	1.0	100
Pb	10000	1.0	100
Se	10000	1.0	100
Tl	10000	1.0	100
Th	10000	1.0	100
U	1000	10.0	100
V	10000	1.0	100
Zn	10000	1.0	100

STOCK #2

Prepare in DI H_2O

Sb	10000	1.0	100
Mo	10000	1.0	100

Appendix 3

ICP-MS CALIBRATION INTERMEDIATE

All concentrations in mg/L
Prepare in 1% trace grade HNO_3

ELEMENT	STOCK CONC	VOL OF STK **IN 100 mL**	INT CONC
Al	10000	10.0	1000
Ca	10000	10.0	1000
Fe	10000	10.0	1000
K	10000	10.0	1000
Mg	10000	10.0	1000
Na	10000	10.0	1000
STOCK #1	see table 2	10.0	10
STOCK #2	see table 2	10.0	10

Appendix 4

ICP-MS CALIBRATION STANDARDS and LINEAR RANGE SOLUTIONS

Add the intermediate to a 100 mL volumetric flask containing 1.0 mL trace metal grade HNO_3 and bring to volume. Standard 3 is made up to 200 mL with addition of 2.0 mL HNO_3.
NOTE: *Standard 1 is a standard at the RL (Low Check Standard) level see Section 7.9 and Appendix 7 for solution preparation.*

Standard	mL Intermediate	Concentration μg/L in 1% HNO_3	
		Non-minerals	Minerals
1 see Note	0.10	RL	RL
2	0.1	10	1000
3	0.2	20	2000
4	1.0	50	5000
5	1.0	100	10000
LR200	2.0	200	20000
LR300	3.0	300	30000

Appendix 5

ICP-MS INORGANIC VENTURES ICV

All concentrations in mg/L

ELEMENT	STOCK CONC	FINAL CONC
Ag	2.5	0.050
Al	250	5.000
As	2.5	0.050
Ba	2.5	0.050
Be	2.5	0.050
Ca	250	5.000
Cd	2.5	0.050
Co	2.5	0.050
Cr	2.5	0.050
Cu	2.5	0.050
Fe	250	5.000
K	250	5.000
Mg	250	5.000
Mn	2.5	0.050
Mo	2.5	0.050
Na	250	5.000
Ni	2.5	0.050
Pb	2.5	0.050
Sb	2.5	0.050
Se	4.0	0.080
Th	2.5	0.050
Tl	2.5	0.050
U	2.5	0.050
V	2.5	0.050
Zn	2.5	0.050

Appendix 6

ICP-MS DUAL DETECTOR CALIBRATION SOLUTION

All concentrations in mg/L
Use Intermediate 1 at 1/200

ELEMENT	STOCK CONC	VOL OF STOCK (Elan) Intermediate 1 IN 200 ml	VOL OF SUPPLEMENT 1000mg/L individual elements	FINAL CALIB SOL'N CONC µg/L (in 1% HNO_3)
Ag	1000	1.0	0.04	0.250
Al	1000	1.0		0.050
As	1000	1.0		0.050
Ba	1000	1.0	0.04	0.250
Be	1000	1.0		0.050
Bi	1000	1.0		0.050
Ca	1000	1.0	0.09	0.500
Cd	1000	1.0	0.04	0.250
Co	1000	1.0	0.01	0.100
Cr	1000	1.0	0.01	0.100
Cu	1000	1.0	0.04	0.250
Fe	1000	1.0	0.09	0.500
Ge	1000	1.0		0.050
In	1000	1.0		0.050
K	1000	1.0		0.050
^{6}Li	1000	1.0		0.050
Mg	1000	1.0		0.050
Mn	1000	1.0	0.01	0.100
Mo	1000	1.0	0.04	0.250
Na	1000	1.0		0.050
Ni	1000	1.0		0.050
Pb	1000	1.0		0.050
Sb	1000	1.0	0.04	0.250
Sc	1000	1.0		0.050
Tb	1000	1.0		0.050
Th	1000	1.0		0.050
Tl	1000	1.0		0.050
U	1000	1.0		0.050
V	1000	1.0	0.01	0.100
Y	1000	1.0		0.050
Zn	1000	1.0		0.050

Appendix 7

ICP-MS LOW CHECK SOLUTION

Use Intermediate at 0.05/100 for final levels

ELEMENT	STOCK CONC mg/L	VOL OF STOCK IN 100 mL	INT CONC mg/L	FINAL CONC µg/L (in 1% HNO_3)
Ag	1000	0.04	0.4	0.2
Al	10000	0.4	40	20
As	1000	0.04	0.4	0.2
Ba	1000	0.1	1	0.5
Be	1000	0.04	0.4	0.2
Ca	10000	1	100	50
Cd	1000	0.02	0.2	0.1
Co	1000	0.04	0.4	0.2
Cr	1000	0.1	1	0.5
Cu	1000	0.1	1	0.5
Fe	10000	0.4	40	20
K	10000	0.4	40	20
Mg	10000	0.4	40	20
Mn	1000	0.1	1	0.5
Mo	1000	0.04	0.4	0.2
Na	10000	2	200	100
Ni	1000	0.1	1	0.5
Pb	1000	0.02	0.2	0.1
Sb	1000	0.04	0.4	0.2
Se	1000	0.1	1	0.5
Th	1000	0.04	0.4	0.2
Tl	1000	0.04	0.4	0.2
U	1000	0.04	0.4	0.2
V	1000	0.04	0.4	0.2
Zn	1000	0.8	8	4

Appendix 8

ICP-MS Interference Check Solutions: ICSA and ICSAB
All concentrations in mg/L
* AR-6020ICS-A10 Custom Stock Solution from Inorganic Ventures.

ELEMENT	ICSA STOCK CONC*	ICSA FINAL CONC	ICSAB STOCK CONC	ICSAB FINAL CONC (in 1% HNO_3)
Ag			2.0	0.02
Al	100	20		20
As			2.0	0.02
C	200	40		40
Ca	100	20		20
Cd			2.0	0.02
Cl	1000	200		200
Co			2.0	0.02
Cr			2.0	0.02
Cu			2.0	0.02
Fe	100	20		20
K	100	20		20
Mg	100	20		20
Mn			2.0	0.02
Mo	2	0.4		0.4
Na	100	20		20
Ni			2.0	0.02
P	100	20		20
S	100	20		20
Ti	2	0.4		0.4
Zn			2.0	0.02

Appendix 9

ICP-MS INTERFERENCE CORRECTION EQUATIONS

ANALYTE	MASS	EQUATION
V	50.944	-3.127*(Cr53-(0.133*Cr52))
Fe	53.94	-0.028226*Cr52
As	74.922	-3.127*(ArCl 77-(0.815*Se82))
As #1	74.922	-3.127*(ArCl 77-(0.3209*Se78))
Se	77.917	-0.030435*Kr83
Se	81.917	-1.008696*Kr83
Mo	97.906	-0.109613*Ru101
Cd	110.904	-1.073*(MoO 108-(0.712*Pd106))
Cd	113.904	-0.027250*Sn118
In	114.904	-0.014038*Sn118
Sb	122.904	-0.125884*Te125
Pb	207.977	+1*Pb206+1*Pb207

Appendix 10

ANALYTICAL ISOTOPES AND ADDITIONAL MONITORED ISOTOPES

1. ANALYTICAL ISOTOPES	
ELEMENT	ISOTOPE (S)
Li	6
Be	9
Sc	45
Na	23
Mg	24
Al	27
K	39
Ca	44
V	51
Cr	52, 53
Fe	54, 57
Mn	55
Co	59
Ge	72
Ni	60, 62
Cu	63, 65
Zn	66, 67, 68
As	75
Se	78, 82
Mo	98
Y	89
Kr	83
Ag	107
Cd	111, 114
In	115
Sb	121, 123
Ba	135, 137
Tb	159
Tl	205
Pb	206, 207, 208
Bi	209
Th	232
U	238

2. ADDITIONAL ISOTOPES	
ELEMENT	ISOTOPE (S)
Ru	101
Pd	106
Sn	118
Te	125

Appendix 11

ICP-MS REPORTING LIMITS

ELEMENT	RL µg/L
Ag	0.2
Al	20
As	0.2
Ba	0.5
Be	0.2
Ca	50
Cd	0.1
Co	0.2
Cr	0.5
Cu	0.5
Fe	20
K	20
Mg	20
Mn	0.5
Mo	0.2
Na	100
Ni	0.5
Pb	0.1
Sb	0.2
Se	0.5
Th	0.2
Tl	0.2
U	0.2
V	0.2
Zn	4

Appendix 12

Troubleshooting

1. The following sections describe some commonly occurring problems and proposed solutions:

1.1. Poor Curve Fit

1.1.1. Poor curve fit may require individual standards to be rerun or re-prepared; a complete recalibration may be required.

1.1.2. If the curve fit appears to be off between pulse readings (less than approx. 1.5 million-cps) and analog readings (approx. 2 million to 1 billion cps), then a new dual detector optimization/calibration may be required. Poor Pb or Tl curve fit is a good indicator of when this is necessary (other indicator elements are Mn, Th, U).

1.2. Dual Detector Calibration/Optimization: Edit the Smart Tune file in use by adding Detector Voltage optimization and Dual Detector optimization routines. Or go to **DUALDET.SWZ**

1.2.1. Check the files to be used. For the Detector optimization both a Pulse and Analog method will be listed in the Setup section of the SmartTune window. Perform the Detector optimization by aspirating Blank solution. The results will be automatically printed at the end of the procedure.

1.2.2. Check the files to be used. Make sure the DualDetectorNew.mth is listed. Perform a dual detector calibration. Aspirate the dual detector calibration solution. Click on Calibrate. This calibration will take approximately 10 minutes to run. Save the file. An optimization summary will be automatically printed. Note the range of gain values from the optimization print out; record the range of gain values in the maintenance log and compare with those from several previous dual detector calibrations. On the optimization summary, make a note of any r-values <0.9995 and number of points <10. On the Interactive page, check the individual calibration graphs for good curve fits.

1.2.3. Run a daily performance check to check sensitivity. Compare the sensitivity before and after the dual detector calibration.

1.3. Poor relative standard deviation (precision) on standards and samples: Poor RSDs have many potential causes. Recalibrate if any adjustments are made.

1.3.1. First, check that the peristaltic pump tubing is in good condition and not worn. When a probe is removed and reinserted in the rinse solution an air bubble will be visible in the tubing.

Watch the progress of this bubble and check that the flow is smooth without any pulsation. Only adjust the tension on the pump tubing beds if necessary.

1.3.2. Check that the nebulizer is operating properly by first by checking the back pressure in the instrument window (Diagnostics Tab). The aerosol may be checked with the plasma off and the nebulizer removed from the spray chamber. Turn on the nebulizer gas and the peristaltic pump; there should be a visible aerosol leaving the spray chamber. If there is not, clean or replace the nebulizer. NOTE: If a clogged nebulizer is suspected use the "Nebulizer Obstruction Removal Kit" to unclog. Do not sonicate the nebulizer as this will render it non-operational.

1.3.3. Check that the interface cones are in good condition and the orifices all of the cones are round and of the proper size.

1.4. Low Sensitivity

1.4.1. First check the x-y adjustment of the torch to sampler cone: this is normally done during the daily optimization routine.

1.4.2. Check the sample uptake as recommended in section 1.3.2. If it is too low, then check the tubing for clogs and check the air bubble progress in the uptake tubing.

1.4.3. With the plasma off, check the sampler cone to torch spacing using the Perkin Elmer spacer tool. Also check the condition of the cones.

1.4.4. Check the 6-port Valve. Aspirate DI water, then air until all water is removed from the sample introduction system. Turn off the Plasma.

1.4.5. See the maintenance section (pp117-120) of the ESI Manual before disassembling the valve. Inspect valve parts and surfaces for cleanliness and clogs. Clean parts as recommended in the ESI manual. Replace the rotor or stator is necessary (check for scratches on the rotor surface).

1.4.6. Note: the sample probe and sample Loop can be removed from the valve for cleaning and flushing while the instrument is running provided the valve is in the LOAD position. These should be flushed with ~2% Nitric acid solution, Methanol, followed by DI water and air.

Appendix 13

Instrument Maintenance

1. Daily Maintenance

1.1. Cones: The sample cone is inspected daily for build-up of salts and soot. No cleaning is required for light build-up. Swab lightly with a slightly DI water moistened cotton swab to remove moderate build-up. Allow to air dry for 5 minutes. If the salt build-up is heavy, remove both the sample and the skimmer cone assembly (Skimmer and attached hyper skimmer), and sonicate after the removal of their O-rings (see page 111-121 of the NexION® Maintenance Manual).

1.1.1. Peristaltic Pump Tubing: Inspect the peristaltic pump tubing daily for flat areas and wear. Typically, they require replacement after 2 to 3 sample runs.

1.1.2. Water Chiller: Check the water chiller daily for the following settings. The temperature meter should be 14-16° C. The temperature can be adjusted using the knob below the meter (wait 5 minutes between adjustments). Check the coolant level under the small square panel on the top right corner of the chiller. It should be almost full (to the line below the cap threads). Otherwise, fill with DI water to the line. Check the pressure gauge on the front panel; it should be 54-56 psi. The pressure can be adjusted at the regulator located on the back (see page 5-31 of the hardware guide).

1.1.3. Vacuum Pump: Use the maintenance Section of the Instrument window to check Oil change parameters.

1.2. Maintenance as Needed:

1.2.1. Nebulizer: The PFA-ST nebulizer may require maintenance if a lowered uptake rate is suspected. Check all tubing connectors and sample probe for clogs first. To change the nebulizer, extinguish the plasma, and replace the nebulizer with a spare one.

1.2.2. Torch: The torch, which is made up of a quartz torch body, a quartz injector and a Lexan adapter/base, requires replacement periodically. Torch body discoloration is acceptable unless performance is affected. If the torch has an arc spot, be aware that it may develop into a crack or hole. Sensitivity losses may necessitate torch maintenance to eliminate it as a possible cause.

1.2.3. Load Coil: The load coil requires replacement periodically. Inconsistent torch lighting may necessitate cleaning of the coil. Replace the coil if the surface becomes pitted from excessive arcing.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

USEPA CLP 245.5M and SW-846 Method 7471A
ARI Prep Code: SMM

SOP 511S
Version 011.1

Revision Date: 2/22/17
Effective Date: 2/22/17

Prepared By:

Jay Kuhn

Approvals:

Laboratory Manager

David R Mitchell

Quality Assurance

Annual Review

SOP Number: 511S

Title: Metals Sample Prep: SMM

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

Standard Operating Procedure - Metals
USEPA CLP 245.5M and SW-846 Method 7471A
ARI Prep Code SMM

1. Scope and Application

1.1. This is the routine “In-house” digestion procedure used by Analytical Resources for mercury analysis of soil samples. The method is a combination, with modifications, of the USEPA CLP 245.5M and SW-846 7471A. This digestion is applicable to soil, sediments, and sludge type materials for mercury analysis by the cold vapor atomic absorption method (CVAA). Samples prepared by this method will be labeled with the "SMM" preparation code.

1.2. This standard operating procedure describes a procedure using a “HotBlock” with 100 mL polypropylene digestion vessels.

2. Summary of the Procedure

2.1. The sample is homogenized and a portion is weighed out into a polypropylene digest tube. Deionized water, concentrated nitric acid and concentrated sulfuric acid is added to the tube before loosely capping it. The sample is then heated in a hot block for 2 minutes. After this more deionized water as well as potassium permanganate and potassium persulfate are added to the digestion tube. The tubes are then heated in a hot block for 30 minutes. Samples are then allowed to cool and finally one last amount of deionized water is added to bring the digestion up to the appropriate volume.

3. Definitions

3.1. N/A

4. Interferences

4.1. The work area, including bench top and fume hoods should be cleaned periodically to prevent sample contamination.

5. Safety

5.1. Concentrated acids are very dangerous. Follow proper safety procedures according to the ARI Chemical Hygiene Plan. Always wear gloves, eye protection, and a lab coat.

5.2. All acid and sample waste must be disposed of following ARI Waste Management Plan.

6. 6. Equipment and Supplies

6.1. HotBlock

6.2. 100 mL graduated polypropylene digestion tubes

6.3. Volumetric flasks

6.4. Automatic pipettes and/or dispensers for standard and reagent additions

6.5. Balance

7. Reagents and Standards

7.1. Concentrated sulfuric acid (H_2SO_4 96.8%): Use trace metal grade sulfuric acid.

7.2. Concentrated nitric acid (HNO_3 70%): Use trace metal grade nitric acid that has been lot QC checked.

7.3. Potassium permanganate solution ($KMnO_4$): 5% solution, w/v. Dissolve 50 grams of $KMnO_4$ in 1000 mL of deionized water.

7.4. Potassium persulfate solution ($K_2S_2O_8$): 5% solution, w/v. Dissolve 50 grams of $K_2S_2O_8$ in 1000 mL of deionized water.

7.5. Deionized water, ASTM type I.

8. Sample Collection, Preservation, Shipment and Storage

8.1. Samples will be collected in certified clean containers.

8.2. Samples will be stored in a refrigerator after arrival.

8.3. The holding time for samples awaiting Hg analysis is 28 days from time of collection.

8.4. Unless otherwise specified by the client, samples will be stored for 3 months after digestion is complete.

8.5. Occasionally ARI will receive multiphase heterogeneous samples. Do not process multiphase samples without specific, documented instructions from ARI's Project Manager or Client. Note: When conducting an environmental investigation, the investigator generally has some specific purpose in mind. He/she then designs and executes a sampling program oriented toward providing information relative to that specific purpose. One goal of environmental sampling is that the sample be representative of either the environment from which it was taken or some specific characteristic of interest. Any unbiased environmental sample has the potential to contain materials (rocks, biological material, multiple phases etc.) that are non-representative of either the matrix or the characteristic. Such materials will often be excluded or separated from the sample when they are judged to be irrelevant to the specific purpose of the investigation or the characteristic of interest. A fundamental principle of environmental sampling is that only the designer of the sampling program makes decisions concerning the representativeness of materials contained within a sample. That person makes the decision to exclude materials from the sample. When a sample arrives at the laboratory, ARI can only assume that it represents the specific purpose and desires of the investigator. Decisions as to the exclusion of materials or separation of phases have already been made by the investigator and sampling personnel. It is not the role of ARI personnel to exclude

materials or phases from a sample for analysis unless it is done with the knowledge and under the specific direction of ARI's client.

9. Quality Control

9.1. All glassware and bottles should be washed and prepared followings the procedure outlined in SOP 500S, Metals Glassware Prep.

9.2. All quality control samples are assigned when samples are batched in Element.

9.3. Verify the following:

9.3.1. Method blanks are processed with each analytical batch, or every twenty samples. For solid matrix DOD projects, add Teflon boiling chips to the blank.

9.3.2. Other QC samples, spikes, duplicates, reference materials, and/or laboratory control samples are processed as requested in Element and/or at a minimum of one set per batch of up to twenty samples.

9.4. For spiked samples the spiking solutions must be added, when possible, directly onto the sample. Weigh the appropriate amount of sample into the digestion tube, add no reagents, and inform the person who will do the spiking so they can make the proper additions. For spiking instructions see SOP 527S.

10. Calibration and Standardization

10.1. All spiking pipettes will be calibrated by the Metals Instrument Lab as detailed in ARI SOP 1015S.

10.2. All balances will be checked for proper calibration daily as detailed in ARI SOP 1003S.

11. Procedure

11.1. Section 7.1 of 7471A requires triplicate 0.2 gram samples be weighed, ARI uses 0.2 to 2.0 grams of sample depending on client requested reporting limits. Also, ARI substitutes 5 mL H_2SO_4 and 2 mL HNO_3 for the 5 mL DI water and 5 mL aqua regia specified in the method, which is consistent with CLP 245.5M. ARI adds 8mL $K_2S_2O_8$ along with the $KMnO_4$ before heating, also consistent with CLP.

11.2. Section 5.8 of 7471A states "Acidity of the working standard should be maintained at 0.15%". ARI has found that 0.5% adds additional standard stability and better matrix matches the preserved client sample. There is no evidence that this modification effects the performance and/or results of the analysis.

11.3. This procedure has been modified to take advantage of the HotBlock using 100 mL graduated polypropylene digestion tubes. The modification has been implemented to help comply with Washington State Department of Ecology pollution minimization requirements.

11.4. Standard Preparation

11.4.1. Calibration Stock Solution (1000 mg/L Hg): Certified stock standard solutions are purchased. All appropriate lot information should be entered in the Standard section of Element.

11.4.2. Intermediate Calibration Standard Solution (0.5 mg/L Hg): Pipette 0.050 mL of 1000 mg/L Hg stock standard, 11.4.1., into a 100 mL glass volumetric flask containing approximately 25 mL of deionized water and 0.5 mL of HNO_3. Dilute to 100 mL with deionized water and mix. Make this standard fresh daily and enter all information in the standard section of Element.

11.4.3. Calibration Standards: Create new standard ID's in Element, entering the stock standard ID# and the quantity of each standard to be made. Add the following amounts of the 0.5 mg/L intermediate mercury solution, 11.4.2., to 100 mL HotBlock tubes containing 10 mL of deionized water in order to make the indicated calibration standards and mix thoroughly:

11.4.4.

mL Intermediate Std.	Final Volume mL	µg/L Hg
0.00	50	0.0
0.01	50	0.1
0.05	50	0.5
0.10	50	1.0
0.20	50	2.0
0.50	50	5.0
1.00	50	10.0

11.4.4.1. Add 2.5 mL of concentrated H_2SO_4 and mix.

11.4.4.2. Add 1.25 mL of concentrated HNO_3 cap and mix.

11.4.4.3. Heat in a 95°C HotBlock for 5 minutes.

11.4.4.4. Cool the samples.

11.4.4.5. Add 25 mL of deionized water and mix.

11.4.4.6. Add 7.5 mL of $KMnO_4$ solution and mix.

11.4.4.7. Add 4 mL of $K_2S_2O_8$ solution and mix.

11.4.4.8. Cap tube and heat at 95° C in a HotBlock for 30 minutes. After adding the samples to the HotBlock, it may take as much as 15 minutes for the samples to reach 95° C. Start measuring the 30 minutes' time only after the samples have reached appropriate temperature. Record the digest start and end times on the log form.

11.4.4.9. Cool the samples.

11.4.4.10. Add 25 mL deionized water.

11.4.4.11. Record the final volume, 50 mL

11.4.4.12. Cool to room temperature. The standards are now ready for analysis.

11.5. Calibration Verification Standards

11.5.1. Calibration Verification Stock, CV, (5.00 mg/L Hg): This is a certified solution from a different source than that used to prepare the calibration standards. The bottle is labeled “Second Source” for CV. All the appropriate lot information should be entered in Element.

11.5.2. Initial Calibration Verification Standards, ICV, (8.00 μg/L Hg): To make each ICV standard, add 0.08 mL of the 5.00 mg/L stock CV mercury solution, 11.5.1., to a 100 mL HotBlock tube containing 10 mL of deionized water. Follow steps 11.4.4.1. to 11.4.4.12. for each ICV bottle. Enter all information in Element.

11.5.3. Continuing Calibration Verification Standards, CCV, (4.00 μg/L Hg): To make each CCV standard, add 0.04 mL of the 5.00 mg/L stock CV mercury solution, 11.5.1., to a 100 mL HotBlock tube containing 5 mL of deionized water. Follow steps 11.4.3.1. to 11.4.3.12. for each CCV bottle. Enter all information in Element. At a minimum prepare at least two CCV standards. It is better to have prepared one or two extra than to find that you do not have enough to finish the analytic sequence.

11.6. Sample Preparation

11.6.1. Fill out digestion log, entering header information, analyst, date, matrix, start time and prep code(s). With each sample bottle enter the ARI sample ID. At the bottom of the log record the Chemical/Reagent ID for each reagent and the digestion tube lot number that will be used for this batch of samples.

11.6.2. Mix the sample thoroughly to achieve homogeneity. If there are any artifacts, large rocks, sticks, or other articles that are not representative of the sample, do not include them in the digest and describe them in the comments section of the form. If the entire sample consists of material such as this, the sample may need to be ground or crushed to reduce the particle size, contact the supervisor/project manager for additional instructions from the client.

11.6.3. Weigh triplicate 0.2 gram portions of wet sample into a digestion tube. Up to 2.0 grams may be used to meet required client specified detection limits. Record the exact weight, to the nearest 0.001 gram, on the log form.

11.7. At the same time prepare the appropriate QC samples.

11.7.1. For samples that are to be spiked, weigh the appropriate amount of sample into a HotBlock tube, add no reagents, and inform the person who will do the spiking. Once the sample is spiked process it like the rest of the sample batch. The spiked sample is identified with the extension “MS”. For spiking instructions see SOP 527S.

11.7.2. Duplicate samples are treated exactly the same way as the original sample. Try to keep the weights of the two samples, original and duplicate, similar. The duplicate sample is identified with the extension “DUP”.

11.7.3. Method blanks are prepared by adding only the reagents in the same order and at the same times as the samples, to a clean HotBlock tube. When samples are designated for DoD-QSM analysis, use Teflon® boiling chips as a “QC matrix” when preparing method blanks. Method blanks will be identified as “BLK”.

11.7.4. Method blank spike samples are prepared by adding 5 mL of deionized water to a clean HotBlock tube. As with the matrix spike sample inform the person who will be doing the spiking so they can add the appropriate standards. Again, once spiked, process the QC sample with the rest of the sample batch starting at Section 11.10.

11.7.4.1. NOTE: Do Not add the additional 5 mL of deionized water in section 11.9. The sample will be identified “BS”. For spiking instructions see SOP 527S.

11.8. At the same time, weigh another portion of sample for determining the percent solids. If more than one soil prep is being performed per sample only one solids determination is required. See Percent Solids SOP #529S.

11.9. Add 10 mL of deionized water.

11.10. Add 2.5 mL of concentrated H_2SO_4 and mix.

11.11. Add 1.25 mL of concentrated HNO_3 and mix.

11.12. Heat in a 95°C HotBlock for 5 minutes

11.13. Cool the samples.

11.14. Add 25 mL of deionized water and mix.

11.15. Add 7.5 mL of $KMnO_4$ solution and mix.

11.16. Add 4 mL of $K_2S_2O_8$ solution and mix.

11.17. Cap tube and heat in a 95° C HotBlock for 30 minutes. After adding the samples to the HotBlock, it may take as much as 15 minutes for the samples to reach 95° C. Start measuring the 30 minutes time only after the samples have reached the appropriate temperature. Record the digest start and end times on the log form.

11.18. Cool the samples.

11.19. Add 25 mL deionized water.

11.20. Record the final volume, 50 mL.

11.21. Cool to room temperature. The samples and standards are now ready for analysis. See SOP 513S for analysis.

11.22. Scan the completed digestion log to the sample batch in Element.

12. Data Analysis and Calculations

12.1. Verify that all information has been properly entered in the digestion log and scan log to the batch in Element.

12.2. All unused space in the log must be crossed out and initialed by the analyst.

13. Method Performance

13.1. N/A

14. Pollution Prevention

14.1. To help comply with Washington State Department of Ecology pollution minimization requirements, this procedure has been modified to use 100 mL graduated polypropylene digestion tubes. This modification allows the use of less reagents and therefore produces less waste to be returned to the environment.

15. Data Assessment and Acceptance Criteria for Quality Control Measures

15.1. N/A

16. Corrective Actions for Out-of-Control Events

16.1. Any unusual sample or problem that arises must be noted on the digestion log, or an analyst notes form (a “green sheet”) and brought to the attention of the supervisor/manager.

17. Contingencies for Handling Out-of-Control or Unacceptable Data

17.1. A corrective action form will be filled out for any out-of-control or unacceptable data.

17.2. If necessary, the sample/job will be logged in as a redo and prepped again.

18. Waste Management

18.1. See the ARI Waste Management Plan.

19. Method References

19.1. USEPA, Test Methods for Evaluating Solid Waste, SW-846, Volume IA, Method 7471A, September 1994.

19.2. USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration, Document Number ILMO4.0.

20. Appendices N/A

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Standard Operating Procedure

Metals Sample Preparation Mercury
EPA Method 7471A
ARI Prep Code: SWM

SOP 532S
Version 008.1

Revision Date: 2/23/17
Effective Date: 2/23/17

Prepared By:

Jay Kuhn

Approvals:

Laboratory Manager

David R Mitchell

Quality Assurance

Annual Review

SOP Number: 532S

Title: SWM

The ARI employee named below certifies that this SOP is accurate, complete and requires no revisions

Name	Reviewer's Signature	Date

Metals Sample Preparation Procedure

SW-846 Method 7471A

ARI Prep Code SWM

1. Scope and Application

1.1. This is the aqua regia digestion procedure identified in the SW-846 EPA Solid Waste Manual as Method 7471A for the preparation of samples prior to mercury analysis. This digestion is applicable to soil and sediment samples for analysis by the cold vapor atomic absorption method (CVAA). Samples prepared by this method will be labeled with the preparation code "SWM".

1.2. This standard operating procedure describes a procedure using a “HotBlock” with 100 mL polypropylene digestion vessels.

2. Summary of the Procedure

2.1. The sample is homogenized and a portion is weighed out into a labeled polypropylene digest tube. Deionized water and aqua regia are added to the tube before loosely capping it. The sample is then heated in a hot block for 2 minutes. After this more deionized water as well as potassium permanganate are added to the digestion tube. The tubes are then heated in a hot block for 30 minutes. Samples are then allowed to cool and finally one last amount of deionized water is added to bring the digestion up to the appropriate volume.

3. Definitions

3.1. N/A

4. Interferences

4.1. The work area, including bench top and fume hoods should be cleaned periodically to prevent sample contamination.

5. Safety

5.1. Concentrated acids are very dangerous. Follow proper safety procedures according to the ARI Chemical Hygiene Plan. Always wear gloves, eye protection, and a lab coat.

5.2. All acid and sample waste must be disposed of following ARI Waste Management Plan.

6. Equipment and Supplies

6.1. HotBlock.

6.2. 100 mL graduated polypropylene digestion tubes.

6.3. Volumetric flasks.

6.4. Automatic pipettes and/or dispensers for standard and reagent additions.

6.5. Balance.

7. Reagents and Standards

7.1. Concentrated nitric acid (HNO_3 70%): Use trace metal grade nitric acid that has been lot QC checked.

7.2. Concentrated hydrochloric acid (HCl 37%): Use trace metal grade hydrochloric acid that has been lot QC checked.

7.3. Aqua Regia: Prepare immediately before use by carefully adding three volumes of concentrated HCl to one volume of concentrated HNO_3.

7.4. Potassium permanganate solution ($KMnO_4$): 5% solution, w/v. Dissolve 50 grams of $KMnO_4$ in 1000 mL of deionized water.

7.5. Deionized water, ASTM type I.

8. Sample Collection, Preservation, Shipment and Storage

8.1. Samples will be collected in certified clean containers.

8.2. Samples will be stored in a refrigerator after arrival.

8.3. The holding time for samples awaiting Hg analysis is 28 days from time of collection.

8.4. Unless otherwise specified by the client, samples will be stored for 3 months after digestion is complete.

8.5. Occasionally ARI will receive multiphase heterogeneous samples. Do not process multiphase samples without specific, documented instructions from ARI's Project Manager or Client. Note: When conducting an environmental investigation, the investigator generally has some specific purpose in mind. He/she then designs and executes a sampling program oriented toward providing information relative to that specific purpose. One goal of environmental sampling is that the sample be representative of either the environment from which it was taken or some specific characteristic of interest. Any unbiased environmental sample has the potential to contain materials (rocks, biological material, multiple phases etc.) that are non-representative of either the matrix or the characteristic. Such materials will often be excluded or separated from the sample when they are judged to be irrelevant to the specific purpose of the investigation or the characteristic of interest. A fundamental principle of environmental sampling is that only the designer of the sampling program makes decisions concerning the representativeness of materials contained within a sample. That person makes the decision to exclude materials from the sample. When a sample arrives at the laboratory, ARI can only assume that it represents the specific purpose and desires of the investigator. Decisions as to the exclusion of materials or separation of phases have already been made by the investigator and sampling personnel. It is not the role of ARI personnel to exclude

materials or phases from a sample for analysis unless it is done with the knowledge and under the specific direction of ARI's client.

9. Quality Control

9.1. All glassware and bottles should be washed and prepared followings the procedure outlined in SOP 500S, Metals Glassware Prep.

9.2. All quality control samples are assigned when the samples are batched in Element..

9.3. Verify the following:

9.3.1. Method blanks are processed with each analytical batch, or every twenty samples.

9.3.2. Other QC samples, spikes, duplicates, reference materials, and/or laboratory control samples are processed as requested in Element and/or at a minimum of one set per batch of up to twenty samples.

9.4. For spiked samples the spiking solutions must be added, when possible, directly onto the sample. Weigh the appropriate amount of sample into the digestion tube, add no reagents, and inform the person who will do the spiking so they can make the proper additions. For spiking instructions see SOP 527S.

10. Calibration and Standardization

10.1. All spiking pipettes will be calibrated by the Metals Instrument Lab as detailed in ARI SOP 1015S.

10.2. All balances will be checked for proper calibration daily as detailed in ARI SOP 1003S.

11. Procedure

11.1. Section 7.1 of SW-846 7471A specifies weighing triplicate 0.2 gram portions of sample for analysis. ARI uses a single 0.5 - 2.0 gram portion as required to meet client specified detection limits.

11.2. Section 7.1 of SW-846 7471A adds the Hydroxylamine solution before the final addition of water. ARI has found that this helps improve the stability of the Hg in the digest when the permanganate is reduced just prior to analysis. This is also an accepted procedure in EPA Method 245.5 section 11.5 through 11.6.

11.3. Section 5.8 of 7471A states "Acidity of the working standard should be maintained at 0.15%". ARI has found that 0.5% adds additional standard stability and better matrix matches the preserved client sample. There is no evidence that this modification affects the performance and/or results of the analysis

11.4. This procedure has been modified to take advantage of the HotBlock using 100 mL graduated polypropylene digestion tubes. The modification has been implemented to help comply with Washington State Department of Ecology pollution minimization requirements.

11.5. Standard Preparation

11.5.1. Calibration Stock Solution (1000 mg/L Hg): Certified stock standard solutions are purchased. All appropriate lot information should be entered in the Standard section of Element.

11.5.2. Intermediate Calibration Standard Solution (0.5 mg/L Hg): Pipette 0.050 mL of 1000 mg/L Hg stock standard, 11.5.1., into a 100 mL glass volumetric flask containing approximately 25 mL of deionized water and 0.5 mL of HNO_3. Dilute to 100 mL with deionized water and mix. Make this standard fresh daily and record all information in the Standard section of Element.

11.5.3. Calibration Standards: Fill out Mercury Standard Prep Log, entering all header information, the stock standard ID# and the quantity of each standard to be made. Add the following amounts of the 0.50 mg/L intermediate mercury solution, 11.5.2., to 100 mL HotBlock tubes containing 5 mL of deionized water in order to make the indicated calibration standards and mix thoroughly.

mL Intermediate Std.	Final Volume mL	µg/L Hg
0.00	100	0.0
0.01	100	0.1
0.05	100	0.5
0.10	100	1.0
0.20	100	2.0
0.50	100	5.0
1.00	100	10.0

11.5.3.1. Add 2.5 mL of aqua regia mix.

11.5.3.2. Cap bottles and heat in a 95°C water bath for 2 minutes.

11.5.3.3. Allow the samples to cool.

11.5.3.4. Add 25 mL of DI water.

11.5.3.5. Add 7.5 mL of $KMnO_4$ solution and mix.

11.5.3.6. Cap and return to the water bath and heat at 95°C for 30 minutes. After adding the samples to the HotBlock, it may take as much as 15 minutes for the samples to reach 95° C. Start measuring the 30 minutes time only after the samples have reached appropriate temperature. Record the digest start and end times on the log form.

11.5.3.7. Allow the samples to cool.

11.5.3.8. Add 25 mL of DI water.

11.5.3.9. The standards are now ready to be analyzed.

11.6. Calibration Verification Standards

11.6.1. Calibration Verification Stock, CV, (5.00 mg/L Hg): This is a certified solution from a different source than that used to prepare the calibration standards. The bottle is labeled "Second Source" for CV. All the appropriate lot information should be entered in the Standard section of Element.

11.6.2. Initial Calibration Verification Standards, ICV, (8.00 μg/L Hg): To make each ICV standard, add 0.08 mL of the 5.00 mg/L stock CV mercury solution, 11.6.1., to a 100 mL HotBlock tube containing 5.0 mL of deionized water. Follow steps 11.5.3.1. to 11.5.3.8. for each ICV bottle. Record all information on the Standard section of Element.

11.6.3. Continuing Calibration Verification Standards, CCV, (4.00 μg/L Hg): To make each CCV standard, add 0.04 mL of the 5.00 mg/L stock CV mercury solution, 11.6.1., to a 100 mL HotBlock tube containing 5.0 mL of deionized water. Follow steps 11.5.3.1. to 11.5.3.8. for each CCV bottle. Record all information in Element. At a minimum prepare at least two CCV standards. It is better to have prepared one or two extra than to find that you do not have enough to finish the analytic sequence.

11.7. Sample Preparation

11.7.1. Fill out digestion log, entering header information, analyst, date, matrix, start time and prep code(s). With each sample bottle enter the ARI sample ID and the bottle number. At the bottom of the log record the Chemical/Reagent ID for each reagent and the digestion tube lot number that will be used for this batch of samples.

11.7.2. Mix the sample thoroughly to achieve homogeneity. If there are any artifacts, large rocks, sticks, or other articles that are not representative of the sample, do not include them in the digest and describe them in the comments section of the form. If the entire sample consists of material such as this, the sample may need to be ground or crushed to reduce the particle size, contact the supervisor/manager for additional instructions from the client.

11.7.3. Weigh 0.5 grams of wet sample, up to 2.0 grams can be used to meet required client specified detection limits, into a 100 mL HotBlock tube and record the exact weight, to the nearest 0.001 gram, on the log form.

11.8. At the same time prepare the appropriate QC samples.

11.8.1. For samples that are to be spiked, weigh the appropriate amount of sample into a HotBlock tube, add no reagents, and inform the person who will do the spiking (see 9.4.) Once the sample is spiked, process it like the rest of the sample batch. The spiked sample is identified with the extension "MS". For spiking instructions see SOP 527S.

11.8.2. Duplicate samples are treated exactly the same way as the original sample. Try to keep the weights of the two samples, original and duplicate, similar. The duplicate sample is identified with the extension "DUP".

11.8.3. Method blanks are prepared by adding only the reagents, in the same order and at the same times as the samples, to a clean 100 mL HotBlock tube. When samples are designated for DoD-QSM analysis, use Teflon® boiling chips as a "QC matrix" when preparing method blanks. Method blanks will be identified as "BLK".

11.8.4. Method blank spike samples are prepared by adding 5 mL of DI water, to a HotBlock digestion tube. As with the matrix spike sample inform the person who will be doing the spiking so they can add the appropriate standards. Again, once spiked, process the QC sample with the rest of the sample batch starting at Section 11.11. For spiking instructions see SOP 527S.

11.8.4.1. NOTE: Do Not add the additional 5 mL of deionized water in section 11.10. The sample will be identified "BS".

11.9. At the same time, weigh another portion of sample for determining the percent solids. If more than one soil prep is being performed per sample only one solids determination is required. See Percent Solids SOP #529S.

11.10. Add 5 mL of deionized water.

11.11. Add 2.5 mL of aqua regia and mix.

11.12. Cap bottles and heat in a 95°C water bath for 2 minutes.

11.13. Cool the samples.

11.14. Add 25 mL of deionized water and mix.

11.15. Add 7.5 mL of $KMnO_4$ solution and mix.

11.16. Cap and return to the water bath and heat at 95°C for 30 minutes. After adding the samples to the HotBlock, it may take as much as 15 minutes for the samples to reach 95° C. Start measuring the 30 minutes time only after the samples have reached appropriate temperature. Record the digest start and end times on the log form.

11.17. Cool the samples.

11.18. Add 25 mL deionized water.

11.19. Record the finial volume as 50 mL. This volume is based on the calibration standards concentrations, which are calculated using a finial volume of 50 mL, and prepared in the same manner as the samples.

11.20. Cool to room temperature. The samples and standards are now ready for analysis. See SOP 539S for analysis.

11.21. Scan the completed digestion log to the batch in Element.

11.22. Data Analysis and Calculations

11.23. Verify that all information has been properly entered in the digestion log, and the log has been scanned to Element.

11.24. All unused space in the log must be crossed out and initialed by the analyst.

12. Method Performance

12.1. N/A

13. Pollution Prevention

13.1. To help comply with Washington State Department of Ecology pollution minimization requirements, this procedure has been modified to use 100 mL graduated polypropylene digestion tubes. This modification allows the use of fewer reagents and therefore produces less waste to be returned to the environment.

14. Data Assessment and Acceptance Criteria for Quality Control Measures

14.1. N/A

15. Corrective Actions for Out-of-Control Events

15.1. Any unusual sample or problem that arises must be noted on the digestion log, an analyst notes form (a “green sheet”) and brought to the attention of the supervisor/manager.

16. Contingencies for Handling Out-of-Control or Unacceptable Data

16.1. A corrective action form will be filled out for any out-of-control or unacceptable data.

16.2. If necessary, the sample/job will be logged in as a redo and prepped again.

17. Waste Management

17.1. See the ARI Waste Management Plan.

18. Method References

18.1. USEPA Test Methods for Evaluating Solid Waste, SW-846, Volume IA, Method 7471A, September 1994

19. Appendices

19.1. N/A

ATTACHMENT B-2

Example Field Forms

LANDAU ASSOCIATES

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

Chain-of-Custody Record

Date _____

Page _____ of _____

Project Name _____ Project No. _____

Project Location/Event _____

Sampler's Name _____

Project Contact _____

Send Results To _____

Testing Parameters

Turnaround Time
☐ Standard
☐ Accelerated
☐ _____

Sample I.D.	Date	Time	Matrix	No. of Containers	Observations/Comments
					X Allow water samples to settle, collect aliquot from clear portion
					___ NWTPH-Dx - run acid wash silica gel cleanup
					___ 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

Method of Shipment

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name	Printed Name	Printed Name	Printed Name
Company	Company	Company	Company
Date Time	Date Time	Date Time	Date Time

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

12/2014

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

Sample Chain-of-Custody Form

Figure
1

LANDAU ASSOCIATES

Field Report

Project No.: _____ Report No.: _____

Client: _____ Date: _____

Project Name: _____ DPD Permit No.: _____

Location: _____

Weather Conditions: _____

Prepared By: _____

Visitors: _____

Unsatisfactory Conditions & Recommended Correction: _____

Attachments: _____

Signed: _____

LANDAU ASSOCIATES

Groundwater Low-Flow Sample Collection Form

Project Name: _____ Project Number: _____

Event: _____ Date/Time: _____

Sample Number: _____ Weather: _____

Landau Representative: _____

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: _____

DTW Before Purging (ft) _____ Time: _____ Flow through cell vol. _____ GW Meter No.(s) _____

Begin Purge: Date/Time: _____ End Purge: Date/Time: _____ Gallons Purged: _____

Purge water disposed to: ☐ 55-gal Drum ☐ Storage Tank ☐ Ground ☐ Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/ Observations
Purge Goals: Stablization of Parameters for three consecutive readings within the following limits								**>/= 1 flow through cell**	
	+/- 3%	**+/- 3%**	**+/- 10%**	**+/- 0.1 units**	**+/- 10 mV**	**+/- 10%**	**< 0.3 ft**		

SAMPLE COLLECTION DATA

Sample Collected With: ☐ Bailer ☐ Pump/Pump Type _____

Made of: ☐ Stainless Steel ☐ PVC ☐ Teflon ☐ Polyethylene ☐ Other ☐ Dedicated

Decon Procedure: ☐ Alconox Wash ☐ Tap Rinse ☐ DI Water ☐ Dedicated

(By Numerical Order) ☐ Other _____

Sample Description (color, turbidity, odor, sheen, etc.): _____

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/ Observations
1									
2									
3									
4									
Average:									

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)		
	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX)	WA ☐	OR ☐
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease)	WA ☐	OR ☐
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)		
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)		
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)		
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)		
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic		
	VOC (Boeing short list)		
	Methane Ethane Ethene Acetylene		
	others		

Duplicate Sample No(s): _____

Comments: _____

Signature: _____ Date: _____

LANDAU ASSOCIATES

Exploration No. _____
Date _____ Hour _____

Log of Exploration

Project Name _____ Project No. _____

Client/owner _____ Exploration Operator _____

Exploration Method _____

_____

Logged by _____ Exploration Completed _____

Ground Surface Conditions _____

Weather Conditions _____

Location Sketch (show dimensions to mapped features)

North Arrow

(East) (North)

Coordinates: "x" _____ "y" _____ Method _____

Elevations _____ Datum _____

Sample Depth (top) (ft.)	Sample Length (ft.)	Recovery Length (ft.)	Retained Depth (top) (ft.)	Retained Length (ft.)	Sample Number	Sampler/Hammer Codes	Blow Counts	Other Test Data) _____	USCS Symbol / Unit Contact	Depth Scale (ft)	Sample Description Color, secondary soil type, PRIMARY SOIL TYPE with modifiers and minor components (density/consistency, moisture)(geologic unit)	Comments on Heave, Water Conditions, & Drilling Action
										0		
										1		
										2		
										3		
										4		
										5		
										6		
										7		
										8		
										9		
										0		
										1		
										2		
										3		
										4		
										5		
										6		
										7		
										8		
										9		
										0		

Sampler and Hammer Information

a = 3.25-in. O.D. – D&M	1 = 300-lb./30-in. Drop
b = 2.0-in. O.D. – SPT	2 = 140-lb./30-in. Drop
c = Shelby Tube	3 = Pushed
d = Grab Sample	4 = Vibrocore
g = 2.5-in. O.D.– WSDOT	5 = _____
h = 3.0-in. O.D. – M.Calif.	
i = _____	

Water Level Information

Date		
Time		
Depth to Water		
Hole Depth		
Casing Depth		

Total Depth _____ Finish Date _____ Hour _____ Continued

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PROJECT _____ PROJECT NO. _____

EVENT _____

SAMPLE NO. _____

DATE COLLECTED _____ TIME _____

Soil/Sediment Sample Collection Form

Weather _____ Collector(s) _____

SAMPLE LOCATION/COMPOSITE DATA

Sample Type: o Soil o Sediment o Other _____

Sample Location: _____

Sample Composited: o Horizontally Locations: _____
o Vertically Depth Ranges: _____
o Not Composited o Other: _____

Elevation and Reference: _____

SAMPLE COLLECTION DATA

Sample Collected From: o Hand-Dug Hole o Test Pit o Boring o Catch Basin/Manhole o Other _____

Sample Collected With: o Bowl o Spoon o Split Barrel o Shovel o Auger o Other _____

Made of: o Stainless Steel o Steel o Other _____

Decon Procedure: *(By Numerical Order)* o Alconox Wash o Tap Rinse o DI Water Rinse o Other _____ o Other _____
o Other _____

SAMPLE DESCRIPTION (color, grain size, density, moisture, etc.): _____

SIZE	QUANTITY	TYPE	LABORATORY ANALYSIS
_____	_____	o Glass o Plastic o Other _____	_____
_____	_____	o Glass o Plastic o Other _____	_____
_____	_____	o Glass o Plastic o Other _____	_____

Co-Located/Duplicate Sample No(s). _____

Photo No. _____ Roll No. _____

Comments: _____

o *Continued on Back*

Signature _____ Date _____

LANDAU ASSOCIATES

Survey Field Notes Form

Project Name: _____ Project Number: _____

Location: _____ Date: _____

Client: _____ Landau Rep: _____

Station	$B^{(+)}$ s	H I	$F^{(-)}$ s	Elevation	Description/Comments

LANDAU ASSOCIATES

As-Built Well Completion Form

Exploration No.: _____

Well No. (If different than Expl. No.): _____

Client/Owner: _____ Project No.: _____

Project Name: _____

Drilling Co.: _____

LAI Rep(s): _____

Installation Start Date: _____ Hour: _____

Installation Finish Date: _____ Hour: _____

Well Type: ☐ Single ☐ Nested ☐ Clustered

BORING AND WELL DIMENSIONS AND INSTALLATION DETAILS

DOE Unique Well No.: _____

Number of Pipes in Boring: _____

Boring Diameter at Top of Hole: _____

Does Diameter of Hole Change? _____

Boring Diameter at First Step Down: _____

Depth of First Step Down: _____

Boring Diameter at Second Step Down: _____

Depth of Second Step Down: _____

Well Completion Date: _____

Elevation of Well Cover: _____

Elevation of Top of Well Pipe: _____

Depth to Water: _____

Date: _____ Time: _____

_____

_____

MATERIALS USED

_____ Sacks of _____ Sand

_____ Sacks of _____ Concrete/Cement

_____ Sacks of _____ Grout Mix Used

_____ Sacks of Bentonite Chips

_____ Feet of _____-inch PVC Blank Casing

_____ Feet of _____-inch PVC Slotted Screen

_____ Threaded End Cap

_____ Waterproof Well Seal/Slip Cap

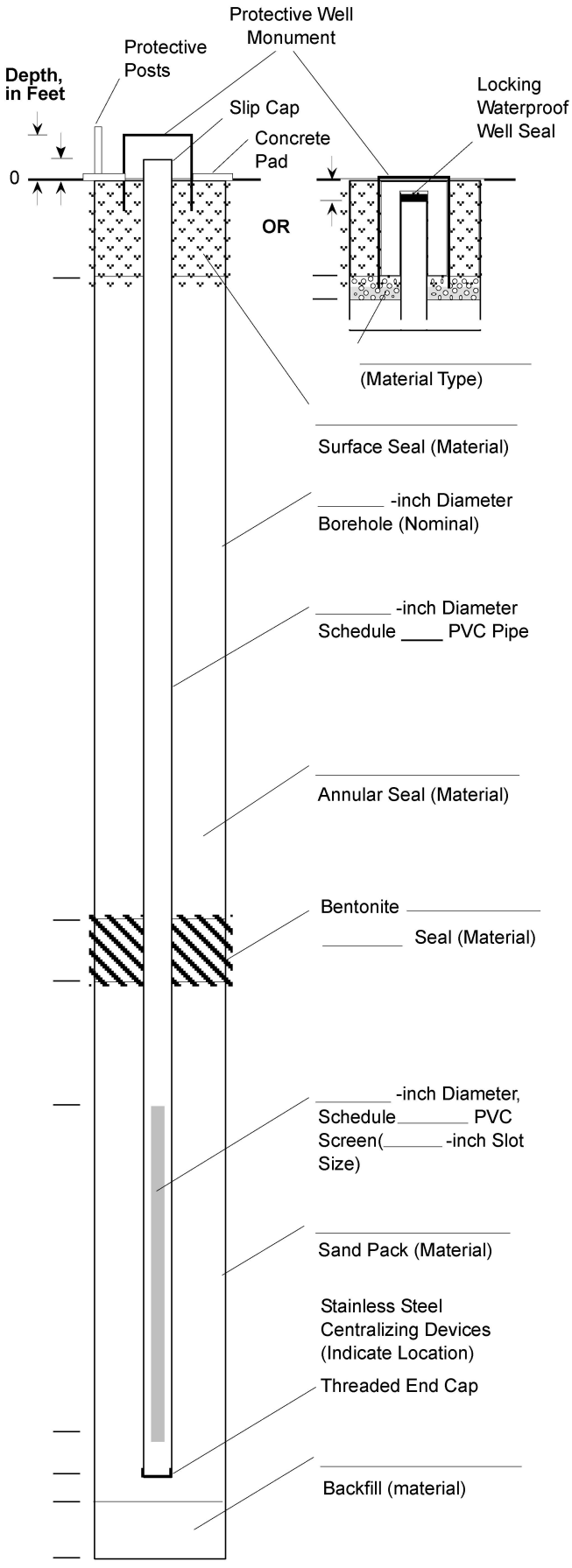
_____ Flush Mount/Aboveground Protective Monument

_____ Protective Posts

_____

_____

_____



\\Edmdata\wproc\000\MasterForms\Field\Well As-Built Form.cdr

LANDAU ASSOCIATES

Well Development Record

Project Name: _____ Project No. _____
Location: _____ Date: _____
Client: _____ Landau Representative: _____

Well Number: _____ Time: _____

Depth to Water: _____
Well Depth: _____
Casing Diameter: _____
Casing Volume: _____

Volume of Schedule 40 PVC Pipe

Diameter (inch)	O.D. (inch)	I.D. (inch)	Volume (gal/ln ft)	Wt. Water (lbs/ln ft)
1.25	1.660	1.380	0.08	0.64
2	2.375	2.067	0.17	1.45
4	4.500	4.026	0.66	5.51
6			1.47	12.24

Est. Purge Volume: _____

Method of Development: _____ Surge Block: Yes ____ No ____

Begin Development: Time: Final Volume Purged: _____
Finish Development: Time: Water Disposal: ☐ 55-gal drum ☐ Storage Tank ☐ Ground ☐ Other _____

Initial Water Quality: (Turbidity, Color, Odor, Other) _____ Initial Yield: _____
pH: _____ Temp: _____ Conductivity: _____ Turbidity: ___
Notes: _____

Water Quality Notes: _____

Gallons	pH	Temperature	Conductivity	Turbidity	Comments

Final Water Quality: (Turbidity, Color, Odor, Other) _____
Final Yield: _____
pH: _____ Temperature: _____ Conductivity: _____ Turbidity: _____

Depth to Water After Development: _____ Well Depth After Development: _____

LANDAU ASSOCIATES

Seep Reconnaissance Survey Form

Project Name: _____ Project Number: _____

Event: _____ Date/Time: _____

Seep ID number: _____ Weather: _____

Landau Representative: _____

FLOW AND FIELD MEASUREMENT DATA

Seep Condition: Accessible (YES or NO) Flowing (YES or NO) Describe: _____

Estimated Flow Rate: Volume: _____ mL Time: _____ seconds

Calculation: _____ Flow rate: _____ mL/s

Flow description (steady, intermittent, none, etc.): _____

Seep water description (color, turbidity, odor, sheen, etc.): _____

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Comments/Observations
1							
2							
3							
4							
Average:							

GENERAL OBSERVATIONS

GPS coordinates: Latitude: _____ Longitude: _____

Photo numbers: _____

Comments: _____

Sketch:

Other comments: _____

Signature: _____ Date: _____

APPENDIX C

Health and Safety Plan (HASP)

Health and Safety Plan
Boeing Developmental Center
Tukwila, Washington

May 18, 2020

Prepared for

The Boeing Company

LANDAU ASSOCIATES

130 2nd Avenue South
Edmonds, WA 98020
(425) 778-0907

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FORMS

Form	Title
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2	Confined-Space Entry Permit
3	Dashboard Safety Card

LIST OF ABBREVIATIONS AND ACRONYMS

°C ..... degrees Celsius
°F ..... degrees Fahrenheit
ANSI ..... American National Standards Institute
APF ..... assigned protection factor
Boeing ..... The Boeing Company
CDC ..... Centers for Disease Control and Prevention
CHSO ..... contractor health and safety officer
CO ..... carbon monoxide
DC ..... Developmental Center
EPA ..... US Environmental Protection Agency
H_2S ..... hydrogen sulfide
HASP ..... health and safety plan
HAZWOPER ..... Hazardous Waste Operations and Emergency Response
HEPA ..... high-efficiency particulate air
HSO ..... health and safety officer
LAI ..... Landau Associates, Inc.
LDW ..... Lower Duwamish Waterway
LEL ..... lower explosive limit
MULs ..... maximum use concentrations
NIOSH ..... National Institute for Occupational Safety and Health
O_2 ..... oxygen
OAR ..... Onsite Activity Representative
OSHA ..... Occupational Safety and Health Administration
PCB ..... polychlorinated biphenyl
PEL ..... permissible exposure limit
PID ..... photoionization detector
PPE ..... personal protective equipment
ppm ..... parts per million
RI ..... remedial investigation
SDS ..... safety data sheet
TWA ..... time-weighted average
VOC ..... volatile organic compounds

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HEALTH AND SAFETY PLAN SUMMARY

SITE NAME:	Boeing Developmental Center Remedial Investigation (RI)
LOCATION:	9725 East Marginal Way South, Tukwila, Washington
CLIENT:	The Boeing Company (Boeing)
TYPE OF FACILITY:	Industrial/Aerospace Manufacturer
LAND USE OF AREA NEAR FACILITY:	Industrial and Commercial
SITE ACTIVITIES:	RI of soil and groundwater, including: drilling and soil/groundwater sampling activities.
POTENTIAL SITE HAZARDS:	Dermal exposure, incidental ingestion, and/or inhalation of contaminants; weather related illness; slips, trips, and falls; work near heavy equipment and machinery; noise; storms; and work near pedestrians.
POTENTIAL SITE CONTAMINANTS:	Volatile organic compounds (VOCs), petroleum hydrocarbons, polychlorinated biphenyls (PCBs), and metals.
ROUTES OF ENTRY:	Skin contact with or incidental ingestion of potentially contaminated soil, groundwater, solids; and inhalation of airborne droplets, dusts, or vapors.
PROTECTIVE MEASURES:	Protective clothing (including hard hat, steel-toed boots, safety glasses, nitrile gloves, coveralls); (stand-by) air purifying respirators, Tyvek® suits; dust control; and ambient air monitoring equipment.
MONITORING EQUIPMENT:	Photoionization detector (PID), multi-gas meter, and chemical-specific detector tubes.

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1.0 INTRODUCTION

Landau Associates, Inc. (LAI) has prepared this health and safety plan (HASP) to present requirements for remedial investigation (RI) activities associated with the Boeing Developmental Center (DC) facility in Tukwila, Washington (site). Health and safety procedures to be used during these activities include descriptions of existing site conditions and organization, safety procedures, criteria for hazard and risk analysis, levels of personal protection and required equipment, air monitoring procedures, emergency response information, and requirements pertaining to training and medical monitoring of onsite personnel.

This HASP has been prepared to provide procedures for protecting workers from exposure to organic vapors and potentially contaminated soil and groundwater during these activities. These health and safety requirements apply to all personnel, contractors, and others entering locations at the site where invasive RI sampling is being conducted. Contractors are required to submit a HASP covering general safety for the contractors' specific work on the site, or adopt this plan as their own relative to potential exposure to site chemicals of concern. The requirements outlined in this plan are considered the minimum health and safety requirements and are intended to be incorporated by each contractor into their respective HASP. Contractors may choose to apply more stringent health and safety requirements. This plan does not address physical worker safety issues that may be associated with fall prevention, excavation trenching, shoring, hot work, and electrical work, as these activities are covered under the specific contractor HASP, as warranted. Relevant federal, state, and local standards must be followed for all work related to the RI and any associated support activities.

1.1 Site Description

The DC site is located at 9725 East Marginal Way South in Tukwila, Washington near Boeing Field and the Military Flight Center (now called the Military Delivery Center; Figure C-1). The site is bounded by the Lower Duwamish Waterway (LDW) on the west and south, and by East Marginal Way South on the east and the Museum of Flight and Slip 6 on the north. The site is at an average elevation of approximately 20 feet above mean sea level. Surface topography at and in the vicinity of the DC is generally flat. The site and surrounding area is paved.

The DC is an aircraft and aerospace research and development complex, primarily supporting projects for the US Department of Defense. The facility currently consists of more than 30 buildings on approximately 112 acres. It continues to be the primary research and development center for carbon fiber composite structures.

For the purposes of this document, the terms "the site" and "onsite" include the Boeing DC facility and the west campus of the Museum of Flight. The parcel occupied by the Museum of Flight was part of the DC until 2002, when ownership was transferred to King County for expansion of the museum. Ecology considers this parcel part of the DC for the purpose of the RI because Boeing operations and environmental investigations occurred in this area prior to the change in ownership.

1.2 Purpose, Applicability, and Adherence

Activities in this HASP include, but are not limited to, oversight of drilling activities (borehole drilling, installing, and decommissioning of groundwater monitoring wells); collection of groundwater samples from monitoring wells; collection of borehole soil samples during drilling; collection of groundwater samples from seeps along the facility boundary with the LDW. Construction support may include borehole soil and groundwater sampling during drilling and well installation, and air monitoring during drilling and well installation.

All site workers, Boeing personnel, and visitors must read this plan prior to participation in RI field activities or site visits. If information presented in this plan is unclear, the reader must contact the Boeing representative (see Section 1.3) for clarification before participating in field activities. Once the information has been read and understood, the individual will sign the health and safety acknowledgment form (Form 1); the signed form will be kept in LAI's (or other consultant's) project files. After each individual has read this HASP, but before participating in field activities, a training session will be conducted by the consultant/contractor to familiarize Boeing personnel and visitors with health and safety requirements at the site.

This HASP has been designed to be flexible to allow unanticipated location-specific problems to be addressed, while providing adequate and suitable worker protection. These requirements may be modified at any time by the Boeing project manager or the designated Boeing representative. Any modification will be presented to the onsite team during a safety briefing and documented.

1.3 Project Organization and Responsibilities

1.3.1 Boeing Project Manager

The current Boeing project manager is Ms. Lindsey Erickson. Ms. Erickson, or other future Boeing-designated project managers, will have responsibility for project planning and execution relative to environmental affairs and concerns. The project managers will be responsible for making project-level decisions regarding safety rules and operations in consultation with the Boeing Field Engineer and the Consultant Project Manager. The project managers may suspend environmental investigations and recommend suspension of other onsite construction activities to the Boeing DC facility's manager if health and safety issues warrant. Specific responsibilities of the project manager or their designee include monitoring the contractors for compliance with their project-specific HASPs according to the terms of the contract.

1.3.2 Boeing Field Engineer

Ms. Jennifer Parsons is the current Boeing Field Engineer (or Onsite Activity Representative [OAR]). In this capacity, she is the Boeing representative responsible for:

- Monitoring daily activities

- Conducting orientation training for all Boeing personnel before beginning their activities
- Communicating with the project manager regarding investigation and remediation activities and health and safety conditions
- Acting as the project manager's liaison with Boeing site facilities, construction, investigation, and remediation activities representatives.

The Boeing Field Engineer may also be designated as the project health and safety officer (HSO) for Boeing activities onsite. In this capacity, he/she may be assisted by a representative of Boeing's RI consultant. The Boeing Field Engineer may not be available during onsite activities and may transfer safety oversight activities to Boeing's RI consultant.

1.3.3 Consultant Safety Manager

Safety monitoring during site RI activities will be the responsibility of the Boeing Project Manager, and the designated Consultant Health and Safety Manager. The specific person in this role will be identified upon authorization to proceed. If LAI conducts field portions of the RI, then the Consultant Safety Manager, Ms. Christine Kimmel, will review safety plans and documentation prior to the start of field activities, and be the primary point of contact in the case of an incident. The Consultant Safety Manger will also review contractor safety plans and provide comments, as needed. The Safety Manager will oversee any required safety investigation within 24 hours of an incident, and develop corrective actions (as needed).

1.3.4 Consultant Site Safety Officer

The Consultant Site Safety Officer will be present at the site at all times during intrusive site activities related to monitoring well installation, soil boring completion, and sampling activities. The Consultant Site Safety Officer will lead daily safety meetings, review safety documents, and conduct work in accordance with all safety and work plans. The Consultant Site Safety Officer will oversee contractor activities and make observations on safety procedures; any safety concerns will be reported to the Consultant Safety Manager.

Any other consultant that performs RI activities and/or any other consultant that adopts this HASP will designate a Safety Manager and a Site Safety Officer and provide their names and contact info, in writing, to the Boeing Project Manager before performing work.

1.3.5 Contractor Health and Safety Officer

Site contractors will designate their own Contractor Health and Safety Officer (CHSO) to be onsite at all times during all investigation activities. The CHSO will be held responsible by the Boeing Field Engineer and consultant for enforcing the provisions of their HASP. This person will also monitor the implementation of contractor HASPs and notify the project manager, field engineer, and site facilities and contractor representatives of any conditions which may present a danger to personnel in the field or which may require modification of HASPs.

Contractor representatives will be present during all investigation activities and audit health and safety conditions at the site. The Boeing representative, in coordination with the contractor and CHSO, will:

- Ensure that personnel are aware of health and safety requirements and the potential hazards associated with the work, instructed in safe work practices, and understand the planned procedures for dealing with emergencies.
- Ensure that all required forms are completed.
- Correct any work practices or conditions that may result in injury to personnel or exposure to hazardous substances.
- Require that appropriate personal protective equipment (PPE) is properly used by all onsite personnel.
- Report any deviations from the anticipated conditions described in this document to the project manager or his/her representative.

1.3.6 Work Area Security

Work areas where intrusive activities (i.e., drilling and sampling) are being conducted will be barricaded and separated from the general public. Ambient air quality monitoring will be conducted when personnel are located inside the secured work area to monitor for PPE protection/action levels. Barricades consist of, but are not limited to, caution tape, flags, traffic cones, and traffic barricades. Only personnel who are familiar with the work procedures, reviewed and signed the HASP acknowledgment form, and are wearing the proper PPE will be allowed within the interior of the secured work area. Security in the contractor's work area will be the responsibility of the contractor with Boeing concurrence.

2.0 SAFETY PROCEDURES

Safety must be the concern of every individual involved in project activities. Whether in the office or onsite, properly followed procedures are essential for personal safety and to minimize lost time due to injuries or accidents involving equipment. Potential hazards in the work area include, but are not limited to:

- Exposure to toxic or hazardous chemicals
- Physical hazards from heavy equipment
- Drowning hazards from working near a tidally influenced waterway
- Fire and explosion caused by flammable or combustible materials
- Weather-related illness
- PPE requirements for various activities and ambient air quality conditions.

2.1 Chemical Hazards

Volatile organic compounds (VOCs), petroleum hydrocarbons, polychlorinated biphenyls (PCBs), and metals may be present in soil, shallow soil vapor, and groundwater at the site. The presence of these compounds, some of which are known or suspected human carcinogens, requires the special considerations outlined within these health and safety requirements and each contractor's HASP. This plan identifies the specific compounds of concern and action levels of these compounds at which personal protection must be taken.

2.2 Physical Hazards

Field work near heavy equipment and vehicle operations poses physical hazards. Workers must be aware of all heavy equipment activity and be ready to avoid moving vehicles. Mobile construction equipment must be equipped with backup alarms and all workers must be made aware of their use. Only operators of heavy equipment will be allowed to ride and operate the equipment. Relevant federal, state, and local laws and regulations governing construction will be followed. Workers will avoid working in areas where heavy machinery is operating. Safety glasses, ear protection, and high-visibility safety vests will be used around operating machinery.

2.3 Drowning Hazards

Sampling along the bank of the LDW poses drowning hazards, as access to locations can be difficult and the water body is tidally influenced. The "buddy system" is required for all bank sampling (i.e., two samplers must be present at all time). All personnel sampling along the LDW will be required to wear a life vest at all times when conducting work within 10 feet of the bank of the LDW and know how to swim proficiently. A throw-able floatation device (i.e., life ring) and pull rope will also be kept on the bank in case of emergency. Sampling will only take place during low tide and when it is not raining to reduce potential drowning hazards.

2.4 General Safety Requirements

Boeing and contractor personnel have the responsibility for:

- Taking reasonable precautions to prevent injury to themselves and others.
- Performing only those tasks that they believe they can do safely, and immediately reporting the presence of unsafe conditions.
- Implementing the health and safety requirements, and reporting a deviation from the procedures to the project manager or the field engineer.
- Notifying the project manager of special medical problems and ensuring that appropriate onsite personnel are aware of these problems.

The following general safety rules apply:

- All federal and state Occupational Safety and Health Administration (OSHA) regulations related to contaminated sites and construction-related activities including fall prevention, excavation, trenching, shoring, hot work, and electrical work.
- All site personnel will conduct themselves in a professional manner at all times.
- All Boeing facilities are tobacco-free zones. No smoking or chewing of tobacco will be conducted on Boeing property.
- Working while under the influence of intoxicants, narcotics, or controlled substances is prohibited.
- Climbing or standing on machinery or equipment is prohibited unless authorized by the project manager or the field engineer and proper fall protection equipment is worn.
- Individuals required to wear respirators will have an updated respirator fit test and will not have facial hair that may prevent the proper use of the respirator.
- Contact with contaminated or potentially contaminated material will be avoided. Efforts will be made to stage site activity upwind of equipment, activities, and materials if dust is present.
- No use of phones while operating equipment, vehicles, or walking in areas of the site. Phone use is permitted in identified Safety Zones.
- Eating, drinking, or chewing gum, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited inside the designated secured work zones.
- Exchange of PPE with other workers will not be allowed.

2.5 Decontamination Procedures

In the case of an emergency, personal decontamination procedures will be speedily implemented, if possible. If a life-threatening injury occurs and the injured person cannot undergo decontamination procedures without incurring additional injuries or risk, he or she will be transported wrapped in plastic sheeting if time allows and if consistent with the injury. The medical facility will be: 1) informed

that the injured person has not been decontaminated, and 2) given information regarding the most probable contaminants.

2.5.1 Personal Decontamination

A combination of disposable PPE and non-disposable PPE will be utilized to reduce exposure to contaminated soil, soil vapor, and groundwater. Disposable PPE will include nitrile gloves, hearing protection, and Tyvek suits (if conditions warrant). Non-disposable PPE will include steel-toed boots, hard hats, a brightly colored vest or shirt, and a life preserver vest when working near the LDW. Disposable PPE will be managed as solid waste and disposed of at the end of each work day. Non-disposable PPE will be routinely washed with hot water and Alconox® soap, or equivalent, and any obvious signs of contamination will be removed with paper towels prior to conducting the appropriate decontamination process.

All personnel will undergo appropriate decontamination procedures before leaving the secured work zone. Personal decontamination will be as follows:

Step 1: Wash and rinse outer protective clothing (e.g., boots, and any rain gear).

Step 2: Remove disposable clothing (e.g., Tyvek and outer gloves). Place in marked receptacle.

Step 3: Remove, wash, rinse, and sanitize respirator (if used).

Step 4: Wash hands and face.

Certain parts of contaminated respirators, such as the harness assembly or cloth components, are difficult to decontaminate. If grossly contaminated, they will be discarded. Rubber components will be soaked in soap and water and scrubbed with a brush. Respirators will be sanitized by rinsing in a detergent solution followed by a clear rinse, then hung to dry.

2.5.2 Heavy Equipment Decontamination

All heavy equipment must be thoroughly decontaminated before leaving the secured area or the designated decontamination area. Particular care will be taken in decontaminating those parts of heavy equipment that have come into direct contact with soil, such as tracks, tires, shovels, grapples, and scoops.

For wet decontamination procedures, high-pressure water will be used (hot water if necessary). Physical scrubbing with disposable brushes will be used when necessary to loosen materials. Generated waste water will be stored in 55-gallon drums for disposal at an off-site waste disposal facility approved by Boeing. For dry decontamination procedures, the soil or groundwater will be brushed from the heavy equipment that has come into direct contact with potentially contaminated soil, such as tracts, tires, excavator bucket.

2.5.3 Sampling Equipment Decontamination

Disposable sampling equipment will be deposited in a labeled container and disposed of as solid waste. Non-disposable sampling equipment will be decontaminated between sampling intervals by a tap water and Alconox soap (or equivalent) mixture wash, followed by a tap water rinse, and a final distilled water rinse. If contamination is still observed, the process will be repeated as necessary.

2.6 Disposal of Contaminated Materials

Boeing DC uses profiles to characterize waste streams for disposal purposes. These profiles are generated using a combination of process knowledge, manufacturers' safety data sheets (SDSs), and/or analytical test results. Waste is characterized in accordance with 40 Code of Federal Regulations (CFR), parts 261 through 265, and 49 CFR, parts 78 through 215, and the Waste Characterization Manual maintained separately by Boeing Environmental Affairs. Initial laboratory analysis will be conducted whenever a hazardous waste is unknown or suspected. Unknown containerized wastes (label is missing or not legible) will be characterized in accordance with 40 CFR 261, sampled and analyzed per the US Environmental Protection Agency's (EPA's) SW-846.

2.6.1 Hold for Characterization

"Hold for Characterization" labels are used on containers of hazardous waste when the contents must be analyzed. Anytime a container has unknown contents, or if there are questions about compatibility, Boeing Environmental Affairs should be notified. Any container of hazardous waste bearing this label cannot be removed until its contents have been analyzed and identified by laboratory personnel or Environmental Affairs. Additionally, no waste is to be added or removed from any container bearing this label. This container must also be stored for safe keeping at a designated hazardous waste storage facility.

2.6.2 Nonhazardous Waste

"Nonhazardous Waste" labels are to be used on all containers that are legally defined as nonhazardous.

2.7 Housekeeping

Work areas will be kept clean and orderly at all times. Ordinary refuse will be placed in suitable rubbish or recycle bins. Extraneous materials will be minimized within the exclusion zone to reduce the decontamination load and possibilities for cross contamination. Contractors will not dispose of equipment maintenance waste materials at the site without prior approval of the Boeing project manager or designee.

2.8 Visitors

All visitors related to the RI must be escorted by the project manager or designee and will report to Boeing security to register their presence on the site and obtain an appropriate badge. Visitors must bring proof of citizenship to obtain access to the site. Visitors will only be allowed to observe operations if they have reviewed and signed the HASP, and must obey all instructions of the project manager.

2.9 Spill Containment

It is not anticipated that bulk chemicals subject to spillage will be used by site workers during the RI phase of this project. If bulk chemicals are used, advance approval by Boeing will be coordinated and containers will be closed to prevent rain water accumulation and will be labeled. Material will be stored either in a plastic-lined berm or on the existing decontamination pad to eliminate potential runoff to the stormwater sewer system. When working near a storm drain, a protective storm drain cover will be installed to protect from spills or other unwanted material entering the stormwater system. Spill kits are stored onsite and will be delivered to the delineated work area for all intrusive activities to address small releases. Spill kits include the following items:

- Absorbents—universal spill pillow and absorbent pads.
- A 1:1:1 mixture of Flor-Dri (or unscented kitty litter), sodium bicarbonate, and sand.
- PPE—nitrile gloves, heavy neoprene gloves, face shield, Tyvek coveralls and booties.
- Tools for Cleanup—plastic dust pan and scoop, plastic bags for contaminated PPE, and paper towels.
- A shop vacuum to remove small volumes of liquid.

2.10 Hazard/Risk Analysis

Site RI activities have aspects of risks associated with both physical and chemical exposure. Below is a summary of the most common identified risks; however, additional risks can be identified based on changing site conditions.

2.11 Physical Hazard Analysis

2.11.1 Slips/Trips/Falls

Keep work area clear of debris to minimize slips, trips, and falls. Keep engaged in site activities and awareness of body movement. Keep hands free of items to allow for bracing in the event of a slip/trip/fall by storing items in a backpack or pockets of a safety vest. Be aware of road/ground conditions and avoid slippery areas or uneven ground, as warranted. Work on and below the bank of the LDW has many trip hazards that could lead to falling or slipping into the LDW. A life vest will be worn when working within 10 feet of the LDW.

2.11.2 Fire/Explosion

Although some of the chemical compounds can be explosive or flammable, they are found in relatively low concentrations, making the risk of fire or explosive conditions very unlikely during planned site activities. Vehicles will be stocked with an ABC fire extinguisher. If a fire or explosion becomes too large to easily resolve with the fire extinguisher, immediately call the Boeing Emergency number (206-655-2222).

2.11.3 Confined Space Entry

A confined space is defined as an area that has limited work space and limited means of access and egress and is not designed for continuous employee occupancy. A permit-required confined space is a confined space that has the potential for any of the following characteristics:

- It contains or potentially contains a hazardous atmosphere.
- It contains a material that has the potential to engulf an entrant.
- It has an internal configuration that can trap or asphyxiate an entrant (such as tapering walls).
- It contains any other recognized serious safety or health hazards.

Because of the presence of standing water, stormwater manholes at the DC are considered permitted confined spaces. Confined space work is not anticipated during the RI, with the possible exception of opening manholes to better delineate storm drain lines during the utility clearance phase. If confined space entry becomes necessary, all applicable regulations regarding training and entry will be followed. Training and procedures for confined space entry are outlined by the OSHA general industry standard (29 CFR 1910.146; the standard) to require protection for employees who enter permit-required confined spaces. Prior to each confined space entry, a safety plan and permit will be issued (Form 2). The plan will identify roles, procedures, identify risks, and provide mitigation and monitoring procedures for each risk. In general, the confined-space entry process will include the following steps:

1. Coordinate with the Boeing Site OAR concerning the confined-space entry requirements and notification procedures.
2. Notify Boeing Emergency Dispatch (206-655-2222) of pending confined space activities to ensure proper preparedness for an emergency requiring rescue services. Provide location and estimated timing of the confined-space entry.
3. Prepare work area (i.e., perform pre-entry air monitoring, set up blowers and all ventilation, assess access/egress, and set up tripod, if necessary).
4. Ensure that all process piping, mechanical and electrical equipment, etc., have been disconnected, purged, blanked-off or tagged and locked, as necessary.
5. Ensure that hot work (e.g., welding, burning, open flames, or spark-producing operation) that is to be performed in the confined space has been approved by the site HSO and is indicated on the confined-space entry permit and coordinated with Boeing Security for a burn permit.

4. Test confined space atmosphere for oxygen (O_2), lower explosive limit (LEL), carbon monoxide (CO), hydrogen sulfide (H_2S), and VOCs using a calibrated multi-meter and PID. Collect a 15-minute time-weighted average (TWA). In addition to the main space of occupancy, corners and pockets at both the top and bottom levels of the space should be tested as well.
5. Ventilate confined space for a minimum of 15 minutes while continuously monitoring for O_2, LEL, CO, H_2S, and VOCs. Ventilation will continue throughout confined space entry activities.
6. Fill out permit. Once the permit is complete, post it in a conspicuous location.
7. Don PPE (i.e., Tyvek, Tyvek booties, inner and outer gloves, respirator, rescue harness, etc., as necessary).
8. Conduct confined-space entry while continuously monitoring for O_2, LEL, CO, H_2S, and VOCs. One PID and one multi-meter will be used in the immediate vicinity of the entrants. Both meters will be set with appropriate alarm levels, so that alarms are activated when action levels are met or exceeded.
9. If any action level is exceeded during entry, the entrant will immediately evacuate the confined space and the permit will be voided. A new permit will be issued once levels of all monitored constituents are below action levels.
10. Once the work is completed, void and file the permit by notifying the Non-Emergency Dispatch and the HSO.

2.11.3.1 Confined Space Entry General Requirements

General requirements for work in a confined space are listed below:

1. Confined spaces will be identified with a posted sign that reads “DANGER, PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER.”
2. When entrance covers are removed from permit-required confined spaces, the opening will be promptly guarded by a railing, temporary cover, or other temporary barrier.
3. Only personnel trained and knowledgeable in permit-required confined-space entry procedures and rescue will be authorized to enter a permit-required confined space or be an attendant.
4. Natural ventilation will be provided for the permit-required confined space prior to initial entry and for the duration of the confined-space entry procedure. Positive/forced mechanical ventilation may be required. However, care will be taken to not spread contamination outside of the enclosed area.
5. The contents of any confined space will, where necessary, be removed prior to entry. All sources of ignition must be removed prior to entry.
6. A ladder is required in all confined spaces deeper than the employee’s shoulders. The ladder will be secured and not removed until all employees have exited the space.
7. All equipment and hand tools used within permit-required confined space will be intrinsically safe and positively grounded if flammable liquids, gases, or vapors may be contained within the confined space. All power cords will be visually inspected.
8. Hand-held lights and other illumination utilized in permit-required confined spaces will be equipped with guards to prevent contact with the bulb and must be explosion proof.

9. Feed lines to confined spaces will be broken and blanked-out and sources of electrical or mechanical energy, which could activate any area of the confined space, must be identified, tagged, and locked out prior to anyone entering a confined space.
10. Compressed gas cylinders, except cylinders used for self-contained breathing apparatus, will not be taken into confined spaces. Gas hoses will be removed from the space and the supply turned off at the cylinder valve when personnel exit from the confined space.
11. If a permit-required confined space requires respiratory equipment or where rescue may be difficult, safety belts, body harnesses, and lifelines will be used. The outside observer will be provided with the same equipment as those working within the permit space.
12. Only self-contained breathing apparatus of National Institute for Occupational Safety and Health (NIOSH)-approved air line respirators equipped with a 5-minute emergency air supply (egress bottle) will be used in untested confined spaces or in any permit-required confined space with conditions determined to be immediately dangerous to life and health.
13. Where air-moving equipment is used to provide ventilation, chemicals will be removed from the vicinity to prevent introduction into the confined space.
14. Vehicles will not be left running near any confined work space or near air-moving equipment being used for any confined space ventilation.
15. Smoking in any confined space is prohibited.
16. Any deviation from these confined space entry procedures requires the prior permission of the project HSO or project manager.

2.12 Chemical Hazard Analysis

Previous investigations have identified the types and levels of constituents of concern at the site. Historical data and documents referenced in the Remedial Investigation (RI) Work Plan (to which this is an appendix) were used in assessing site hazards and risks. The compounds of potential concern consists of VOC compounds, PCBs, petroleum hydrocarbons, and metals (arsenic and copper). Benzene, tetrachloroethene, trichloroethene, vinyl chloride, and PCBs are either known or suspected carcinogens. Maximum reported historical concentrations of compounds of concern along with the associated exposure limits are summarized in Table C-1. Because of ongoing remedial activities at the site, current contaminant concentrations are lower than the historical highs; thus, low to moderate exposure hazard is expected during Boeing DC RI activities.

2.13 Suspected Hazardous Substances

Several VOCs have been detected at the site and are of concern because they may volatilize when exposed to the ambient air conditions. Table C-1 summarizes maximum concentrations of the various constituents found at the site in soil, groundwater, and indoor/ambient air. Table C-1 also presents selected health and safety exposure limits for the identified constituents.

The primary risk of exposure will be through handling potentially contaminated soil and from inhaling VOCs, TPH, and other contaminants of concern released from the soil, soil vapor, and/or groundwater.

This risk will be greatly reduced by adherence to the minimum level of protection required by this HASP. Some inhalation and ingestion risk from exposure to contaminants as airborne particulates may exist. Concentrations of compounds of concern contained in the particulate are below the safety exposure limits; however, good ventilation, including the possible use of soil wetting techniques, will further reduce the exposure risk.

2.14 Action Levels for Required Protection

Monitoring ambient air quality using real time instruments will be conducted to identify if action levels have been reached that will require upgrading PPE requirements. Action levels are shown in Table C-2. The action levels listed assume sustained readings of 1 minute or more in the breathing zone. The PPE requirement applies to the area within a 25-foot radius of where measured.

Air monitoring will be performed by the CHSO or their designee to determine necessary levels of respiratory protection. Background readings will be taken 50 feet upwind of site activities. Monitoring for organic vapors will be accomplished using the following:

- PID
- Multi-gas meter for explosive vapors
- Chemical-specific detector tubes (benzene and vinyl chloride)
- Visual sign of dust.

Ambient air monitoring will be conducted in the worker breathing zone at regular intervals during all site work in which airborne contamination may be present. During intrusive activities in these areas, breathing space monitoring will be conducted at least every 15 minutes.

Explosive vapor monitoring will be conducted at the borehole open space. Measurement will be conducted at each casing segment and if ambient air conditions indicate additional monitoring is required.

Chemical-specific detector tubes for benzene and vinyl chloride will be collected upon the start of each boring and during time intervals if PID measurements are above the background concentrations for more than 1 minute.

2.15 Justification for Exposure Limits

It is anticipated that most RI activities will be performed at Level D (modified) protection and supplemented with air-purifying respirators if the action levels identified for Level C protection are reached during work.

Action levels for donning respiratory protection will be based on readings taken with a PID and supplemented, as appropriate, with chemical-specific detector tubes. The PID detects all ionizable volatile constituents and does not provide reliable readings below 10 parts per million (ppm);

therefore, for constituents with permissible exposure limits (PELs) less than 10 ppm, chemical-specific detector tubes must be used to determine if these constituents are present at concentrations below 10 ppm, but above their respective PELs. Exposure to volatile ionizable constituents with PELs greater than 10 ppm will be monitored using the PID. Action levels for upgrading personal protection from Level D are specified in Table C-2.

2.16 Level C (Modified) Action Levels

Action levels for upgrading to Level C PPE are not expected to be met based on more recent investigations. If Level C action levels are reached, half-face respirators will be donned by all personnel. A half-face respirator, equipped with organic vapor and high-efficiency particulate cartridges, provides an assigned protection factor (APF) of 10 (NIOSH recommendation). Therefore, a half-face respirator may be worn in concentrations up to 10 times the PEL values noted in Table C-1 (referred to as the maximum use concentrations [MULs]).

Normal field conditions (e.g., drilling operations, groundwater sampling) are not expected to exceed Level C action levels or the MULs, such that more protective levels of personal protection would be required. Should action levels exceed Level C, the work area will be evacuated and the project manager and/or the Safety Manager will be contacted immediately, per Table C-2.

2.17 COVID-19 Response and Best Practices

In response to the outbreak of the novel coronavirus known as COVID-19, Boeing and many other companies have established best practices for protecting their employees and slowing the spread of the virus based on the recommendations of the Centers for Disease Control and Prevention (CDC) and other health agencies. These recommendations are rapidly being updated, but the general best practices include:

- Practice social distancing. Maintain a distance of at least 6 feet between yourself and others.
- Do not share vehicles or equipment. Even if working with another employee, travel separately and use individually-assigned equipment.
- Wash hands frequently with soap and/or disinfectant solutions, especially before eating or touching your eyes, nose, and mouth.
- Don nitrile gloves and a protective face covering or mask immediately after leaving your vehicle when you arrive at the site.

Prior to mobilization, the contractor will review the most current guidance in effect at the site and respond accordingly. Best practices and other COVID-19 protective measures will be discussed and documented by the Contractor Site Safety Officer during the daily safety meeting. The contractor is expected to prepare and maintain an updated company-specific COVID-19 guidance document. A copy of the current company-specific guidance document and the current Boeing guidance document will be kept on-site during work.

3.0 PERSONAL SAFETY EQUIPMENT

Personal safety equipment required for the various levels of protection expected on-site is listed below.

Level D (Modified):

- Nitrile gloves
- Heavy work gloves if cutting or working near sharp objects
- Hard hat
- Safety glasses
- Steel-toe and steel-shank neoprene, leather, or rubber boots
- Safety vest (high visibility)
- Hearing protection (as needed)
- Life vest (as needed).

Level C (Modified):

- Level D (modified) personal safety equipment.
- Tyvek suit (Saranex or equivalent), water resistant coveralls, or rain gear when direct contact with wet soil and water is encountered.
- Half-face air-purifying respirator equipped with high efficiency air purifying organic vapor and high-efficiency particulate air (HEPA) cartridges. Respirators must be NIOSH approved. Cartridges will be changed daily (if used) or more frequently if directed by the project HSO.

4.0 EMERGENCY RESPONSE PLAN

This emergency response plan outlines the steps necessary for appropriate response to emergency situations. The following summarizes the key emergency response plan procedures for this project. Each contractor vehicle associated with well installation and soil boring activities will be provided with a Boeing-supplied Dashboard Safety Card (Form 3), which will summarize the emergency procedures described below.

4.1 Notification and Reporting

The Consultant Safety Manager is to be notified immediately of any emergency situation. If the situation is life-threatening and notification of the Consultant Safety Manager would delay emergency response, site personnel may initiate the appropriate emergency procedures as noted below prior to notifying the Consultant Safety Manager. Site personnel will initiate contacts as follows:

1. Call Boeing Emergency Dispatch (Form 3) and provide the following information:
   - Name and location of person reporting
   - Location of accident/incident (provide building and door number, if possible)
   - Name and affiliation of injured party
   - Description of injuries
   - Status of medical aid effort
   - Details of any chemicals involved
   - Summary of the accident, including the suspected cause and the time it occurred
   - Temporary control measures taken to minimize further risk.

   Note: This information is not to be released to parties other than the Consultant Health and Safety Manager, Boeing and City personnel, contractor personnel, and bona fide emergency response team members.
2. Call the Boeing Project Manager and provide information noted in Item 1 above.
3. Call the Consultant Health and Safety Manager and the Consultant Project Manager with information in Item 1 above.
4. The Consultant Health and Safety Manager will complete a written accident/incident report within 24 hours, sending copies to Boeing's Project Manager.

Resources to be used in cases of emergency include:

- List of Emergency Contacts: Form 3 includes both the appropriate emergency services and the appropriate project contacts.
- Nearest Phone: Telephones are located inside buildings. Boeing and Consultant site personnel also possess cellular phones.
- Onsite Emergency Equipment: An industrial first-aid kit, an ABC type portable fire extinguisher, and an eyewash kit accompany each consultant/contractor vehicle.

- Offsite Emergency Services: Phone numbers for offsite emergency services are listed on Form 3. Copies of this form must be kept in each vehicle.

4.2 Emergency Facilities and Numbers

Hospital: **Harborview Medical Center**
325 9th Avenue, Seattle, WA 98104

Emergency: (206) 744-3074

Emergency Route: See Figure C-2

Directions:

1. Head northeast on S 96th Pl toward E Marginal Way S
2. Turn left onto E Marginal Way S
3. Turn right onto Corson Ave S
4. Turn right onto S Bailey St
5. Use the left two lanes to turn left onto the I-5 N ramp
6. Merge onto I-5 N
7. Use the second from right lane to take exit 164A for Dearborn St toward James St/Madison St
8. Keep left to continue toward James St
9. Keep right, follow signs for James St
10. Turn right onto James St
11. Turn right at the second cross street onto 9th Ave
12. Turn right at the first cross street onto Jefferson St
13. The emergency and trauma center will be ahead on the right (follow signs)

Boeing Emergency Dispatch: (206) 655-2222 (Fire, ambulance, police, spill reporting)

Emergency Contacts:

Name	Office	Mobile	Position
Jennifer Parsons		(206) 715-7981	Boeing OAR
Lindsey Erickson		(206) 327-0404	Boeing PM
Christine Kimmel	(425) 329-0254	(206) 786-3801	LAI H&S Manager
Ken Reid	(425) 329-0266	(206) 786-3804	LAI PM

In the event of an emergency, do the following:

1. Call Boeing Emergency number for help as soon as possible. Give the following information:
   - WHERE the emergency is—use cross streets, landmarks, building numbers, and door numbers, if possible
   - PHONE NUMBER you are calling from
   - WHAT HAPPENED—type of injury
   - HOW MANY persons need help

- WHAT is being done for the victim(s)
- YOU HANG UP LAST—let the person you called hang up first.

2. Transport to the hospital will be performed by local emergency response professionals in all cases. If the injury or exposure is not life threatening, decontaminate the individual first. If decontamination is not feasible, wrap the individual in a sheet of plastic prior to transport.
3. Notify the project manager, Safety Manager, and Boeing representative.

4.3 Onsite Emergency Equipment

An industrial first aid kit, a 20-pound type ABC portable fire extinguisher, and an eyewash kit will be maintained by the contractor.

4.4 Offsite Emergency Services

A copy of EMERGENCY FACILITIES AND NUMBERS will be posted next to the contractor telephone identified for emergency use.

4.4.1 Weather-Related Illnesses

Weather-related (hot or cold weather conditions) illnesses can occur at any time when protective clothing is worn. For heat-related illnesses, workers wearing semipermeable or impermeable encapsulating clothing should be monitored when the temperature in the work area is above 70 degrees Fahrenheit (°F; 21 degrees Celsius [°C]). Heat stress monitoring includes regular checks of heart rate.

Each employee should check his/her pulse rate at the beginning of each break period. The pulse rate should be taken at the wrist for 30 seconds, and multiplied by 2. If the pulse rate exceeds 110 beats per minute, the length of the next work period should be reduced by one-third (the rest period need not be lengthened). A pulse rate in excess of 150 beats per minute may indicate heat exhaustion, although this rate will vary among workers. All personnel will know what their baseline pulse rate is before working in elevated temperatures, so as to monitor themselves. Personnel should follow appropriate guidelines if any personnel exhibit these symptoms:

- Heat Rash—Redness of skin. Frequent rest and change of clothing.
- Heat Cramps—Painful muscle spasms in hands, feet, and/or abdomen. Administer lightly-salted water by mouth, unless there are medical restrictions.
- Heat Exhaustion—Clammy, moist, pale skin, along with dizziness, nausea, rapid pulse, fainting. Remove to cooler area and administer fluids.
- Heat Stroke—Call emergency services. Hot dry skin; red, spotted, or bluish; high body temperature of 104^{o} F; mental confusion; loss of consciousness; convulsions; or coma. Immediately cool victim by immersion in cool water. Wrap with wet sheet while fanning; sponge with cool liquid while fanning; treat for shock. DO NOT DELAY TREATMENT. COOL BODY WHILE AWAITING AMBULANCE.

For cold-related illnesses site personnel may be subject to low temperatures, rain, and winds; therefore, proper protective clothing must be worn. Cold stress can be manifested as both hypothermia and frostbite:

- Hypothermia is a cold-induced decrease in the core body temperature that can increase the safety hazards associated with field work activities that require maximum attentiveness and manual dexterity. Hypothermia produces shivering, numbness, drowsiness, muscular weakness, and, if severe enough, death.
- Frostbite results from the constriction of blood vessels in the extremities, and decreasing the supply of warming blood to these areas. This drop in blood supply may result in the formation of ice crystals in the tissues, causing tissue damage. The symptoms of frostbite are white or grayish skin, blisters, or numbness.

If such conditions exist, the following procedures will be carried out to reduce weather-related stress:

- Acclimatization
- Work/rest cycles
- Heat stress monitoring
- Liquids that replace electrolytes/salty foods available during rest
- Use of buddy system.

The Safety Manger and the CHSO will be trained in monitoring, treating, and recognizing the signs of heat stress. Unless the victim is obviously contaminated, decontamination should be minimized and treatment begun immediately.

4.5 Site Evaluation and Evacuation

The CHSO in cooperation with the Boeing representative will be responsible for determining if circumstances exist that require re-evaluation or evacuation.

4.5.1 Withdraw from Work Area

Withdrawal to a safe upwind location will be required under the following circumstances:

- Detection of VOCs or toxic gases at concentrations above action levels for the level of protection being worn.
- Occurrence of a minor accident—field operations resume after first-aid and decontamination procedures have been administered.
- Malfunction or failure of protective equipment, clothing, or respirator.

5.0 TRAINING

All workers conducting activities within the secured zone will have up-to-date OSHA training, as listed below, but not limited to:

- 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training
- Annual 8-hour HAZWOPER refresher training
- First Aid/CPR
- Occupational health physical exam
- Medical clearance to use a respirator
- Confined space entry (if activities warrant).

Site orientation training will be held before beginning work. If appropriate, based on observation of the work area and air monitoring results, the Boeing project manager or the CHSO may require site personnel to have additional safety training. The initial training will be supplemented, as necessary, in subsequent safety meetings. Orientation training will include:

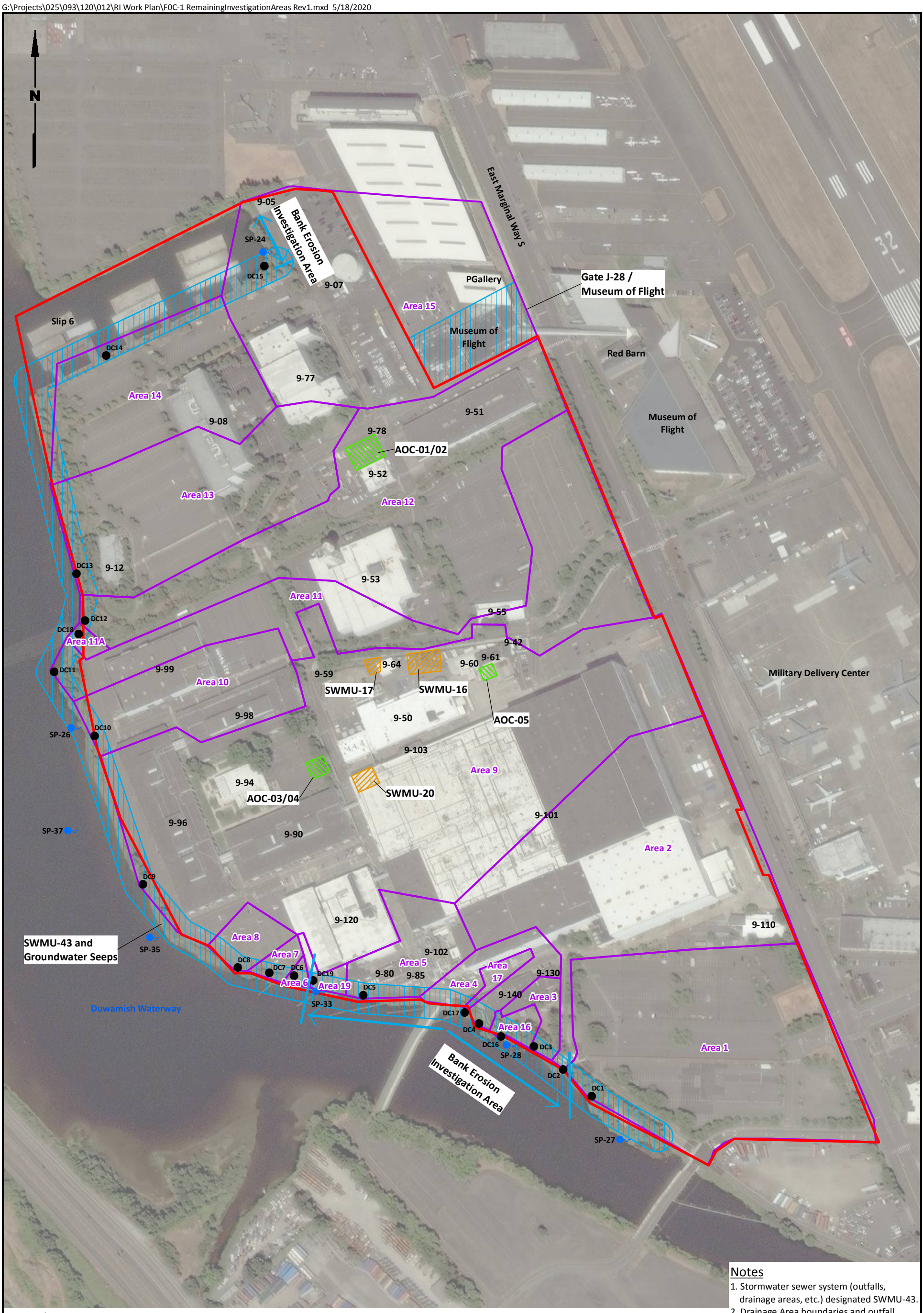
- Health effects and hazards of the chemicals identified or suspected to be at the site and in the work area.
- Personal protection requirements.
- Personal hygiene related to PPE (e.g., facial hair).
- Use, care, maintenance, and fitting of PPE. Training in respiratory equipment use will conform to American National Standards Institute (ANSI) Z88.2 and 29 CFR 1910.134, which establishes the necessity, effectiveness, and limitations of respiratory equipment. Workers with limiting physical disabilities such as respiratory ailments will not be assigned to tasks requiring the use of respirators. Field fit testing for respirators will have taken place prior to entry to the project site.
- Decontamination procedures.
- Accepted practices for entry, exit, and activities within specific areas of the site.
- Emergency response procedures.
- Review and assessment of equipment.

Written documentation of training will be maintained and will be available for Boeing review, if necessary.

6.0 ROUTINE HEALTH CARE AND MONITORING

A baseline medical evaluation will be required for all employees, contractors, and subcontractors performing intrusive activities. An annual update exam will be required for employees, contractors, and subcontractors performing intrusive activities regarding the use of respirators for more than 30 days per year or are exposed to air concentrations greater than permissible exposure limits. Follow-up examinations are appropriate if exposures are known or suspected to have occurred. Documentation of medical evaluations (including medical clearance for respirator use) will be maintained by the contractor and will be available to Boeing for inspection for all workers performing intrusive activities.

G:\Projects\025\093\120\012\RI Work Plan\F0C-1 RemainingInvestigationAreas Rev1.mxd 5/18/2020



Legend

- Known Seep Location
- Outfall
- AOCs
- SWMUs
- Other Investigation Areas
- Drainage Areas
- Facility Boundary

0 300 600

Scale in Feet

Notes

1. Stormwater sewer system (outfalls, drainage areas, etc.) designated SWMU-43.
2. Drainage Area boundaries and outfall locations are subject to change due to planned modifications required for stormwater treatment.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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Data Sources: Boeing; Esri World Imagery.

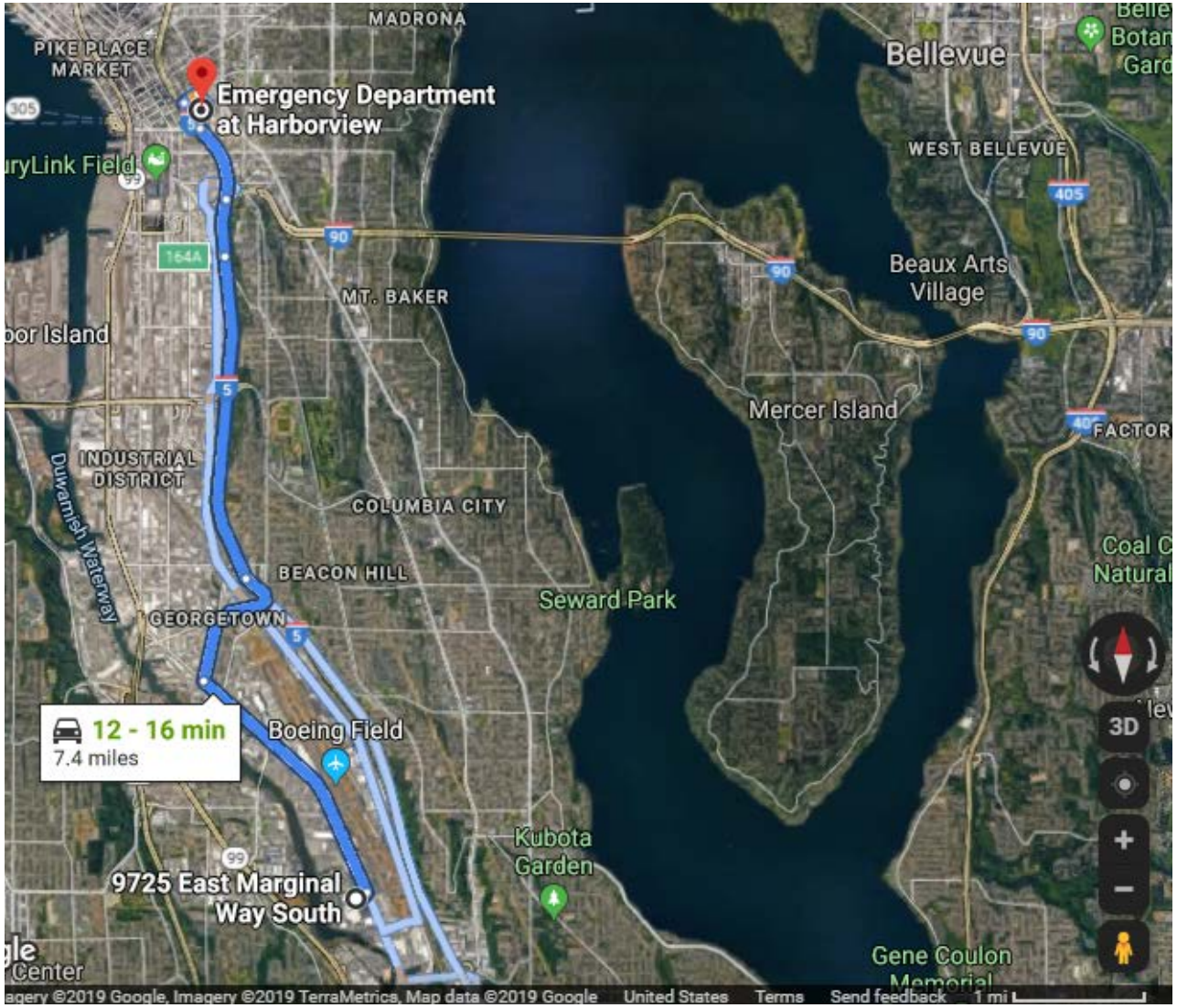
Boeing Developmental Center
Tukwila, Washington

Boeing Facility and RI Investigation Areas

Figure C-1

Directions:

1. Head northeast on S 96th Pl toward E Marginal Way S
2. Turn left onto E Marginal Way S
3. Turn right onto Corson Ave S
4. Turn right onto S Bailey St
5. Use the left two lanes to turn left onto the I-5 N ramp
6. Merge onto I-5 N
7. Use the second from right lane to take exit 164A for Dearborn St toward James St/Madison St
8. Keep left to continue toward James St
9. Keep right, follow signs for James St
10. Turn right onto James St
11. Turn right at the second cross street onto 9th Ave
12. Turn right at the first cross street onto Jefferson St
13. The emergency and trauma center will be ahead on the right (follow signs)



Boeing Developmental Center Remedial Investigation Tukwila, Washington	**Emergency Route to Hospital**	Figure C-2

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Table C-1
Air, Soil, and Groundwater Quality and Site Exposure Assessment
Boeing Developmental Center
Tukwila, Washington

Contaminant	Maximum Maximum Concentration Detected in Environmental Samples				Permissible Exposure Limits		IDLH (ppm)	Route of Exposure	Symptoms of Acute Exposure
	Groundwater (µg/L)	Soil (µg/kg)	Indoor Air (µg/m^3)	Ambient Air (µg/m^3)	TWA (ppm)	STEL (ppm)			
Petroleum hydrocarbons†	270,000	13,000,000			300	500	N.D.	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid); possible liver, kidney damage
Benzene	28,000	130			1	5	500	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression (known carcinogen)
Toluene	2,300,000	2,500			100	150	500	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage
Ethyl benzene	10,000	430			100	125	800	Inhalation, ingestion, skin and/or eye contact	Irritation to eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma
Xylenes	3,400,000	2,200			100	150	900	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis
Naphthalene	1,721	15,000			10	15	250	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage
Perchloroethene	10,000	3,600,000	0.44	0.41	25	38	150	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]
Trichloroethene	7,400	250,000	0.13	0.11	50	200	1,000	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]

Table C-1
Air, Soil, and Groundwater Quality and Site Exposure Assessment
Boeing Developmental Center
Tukwila, Washington

Contaminant	Maximum Maximum Concentration Detected in Environmental Samples				Permissible Exposure Limits		IDLH (ppm)	Route of Exposure	Symptoms of Acute Exposure
	Groundwater (µg/L)	Soil (µg/kg)	Indoor Air (µg/m^3)	Ambient Air (µg/m^3)	TWA (ppm)	STEL (ppm)			
1,2-Dichloroethene	15,000	8,500			200	250	1,000	Inhalation, ingestion, skin and/or eye contact	Irritation to eyes, respiratory system; central nervous system depression
Vinyl chloride	2,000	690			1	5	N.D.	Inhalation, skin and/or eye contact (liquid)	Lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]
Polychlorinated biphenyls		420			0.5*	1.5*	5*	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation to eyes, chloracne; liver damage; reproductive effects; [potential occupational carcinogen]
Arsenic	486	7,800			0.01*	0.6*	5*	Inhalation, skin absorption, skin and/or eye contact, ingestion	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, respiratory irritation, hyperpigmentation of skin, [potential occupational carcinogen]
Copper	100	41,000			1* [OSHA]		100*	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, nose, pharynx; nasal septum perforation; metallic taste; dermatitis; In Animals: lung, liver, kidney damage; anemia

Abbreviations & Acronyms:

µg/L = micrograms per liter
µg/m^3 = micrograms per cubic meter
IDLH = immediately dangerous to life or health
LEL = lower explosive limit
mg/m^3 = milligrams per cubic meter
N.D. = not determined
TLV = threshold limit value
TWA = time-weighted average
STEL = short-term exposure limit
ppm = parts per million
PEL = permissible exposure limit

Notes:

Exposure limits, unless otherwise notes, are Washington State PELs (WAC 296-841-20025) because they are more stringent than the federal PELs.
† = Exposure limits no longer in effect as of June 30, 1993 (29 CFR 1910.1000).
* = concentration units are mg/m^3

Table C-2
Action Levels for Respiratory Protection
Boeing Developmental Center
Tukwila, Washington

Monitoring Parameter	Reading	Level of Protection
Organic vapors (VOCs)	PID > 15 ppm at point of operations for more than 1 minute	Establish 25-ft diameter exclusion zone around work area and monitor worker's breathing zone.
	PID > 15 ppm in worker's breathing zone for more than 1 minute	Evacuate area or upgrade to Level C with half-face respirator with organic vapor/HEPA cartridge. Establish contamination reduction zone with waste containers and supplies for personal decontamination.
	PID > 75 ppm in worker's breathing zone for more than 1 minute	Evacuate area and move upwind to allow vapors to dissipate. Work may be resumed after vapors dissipate, but work must continue in Level C with half-face respirator with organic vapor/HEPA cartridge. Consult project manager.
	PID > 100 ppm in worker's breathing zone for more than 1 minute	Stop work, evacuate area, and move upwind. Do not resume work until Landau Associates H&S Manager has been contacted.
Explosive vapors	LEL > 10%	Stop work immediately and allow vapors to dissipate before resuming work.
Metals, PCBs	Visible Dust	Wet soil to prevent accumulation of dust. If persistent upgrade to Level C with half-face respirator with organic vapor/HEPA cartridge.

Abbreviations and Acronyms:

% = percent
ft = feet
H&S = health and safety
HEPA = high-efficiency particulate air
LEL = lower explosive limit
PCB = polychlorinated biphenyl
PID = photoionization detector
PPM = parts per million
VOC = volatile organic compound

FORM 1

Health and Safety Approval/Sign-off Form

FORM 1

HEALTH AND SAFETY PLAN
APPROVAL/SIGN OFF FORMAT

I have read, understood, and agreed with the information set forth in this Health and Safety Plan (and attachments) and discussed in the Personnel Health and Safety briefing.

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Site Safety Officer	Signature	Date
Safety Manager	Signature	Date
Project Manager	Signature	Date

Personnel Health and Safety Briefing Conducted By:

Name	Signature	Date

FORM 2

Confined-Space Entry Permit

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Confined-Space Entry Permit

Facility: _____
Date and time: _____
Permit Valid From: _____ To: _____
Specific Entry Location: _____
Purpose of Entry: _____
(specify any additional) _____

Entry Supervisor: _____ Date: _____ Time: _____
Entry Attendant: _____ Date: _____ Time: _____
(entrant may change, use personnel list on following page)
Facility/Proj Manager(s): Ken Reid Date: _____ Time: _____

Emergency Contact Information: (In case of emergency, call in the order listed)

Boeing Emergency Dispatch	206-655-2222
911	911
Lindsey E. Mahrt (Boeing)	206-327-0404
or Jennifer Parsons (Boeing)	206-715-7981
Ken Reid (Landau Assoc.)	425-503-6784

Potential Chemicals of Concern:
Petroleum hydrocarbons
Benzene, toluene, ethylbenzene, and xylenes
Trichloroethene
1,2-Dichloroethene
Vinyl chloride
(see HASP for more details)

Potential Physical Hazards:
Equipment hazards
Slips, trips, and falls
Atmospheric conditions in work area
Energy sources
Drowning
(see HASP for more details)

REVIEW THE PLAN, CHECK FOR THE FOLLOWING:	YES	NO
Entry Plan Attached and Reviewed	☐	☐
Area Secured (barricades, cones, other)	☐	☐
Ventilation Equip. in Place, Operating and Grounded	☐	☐
Communication Equipment Tested (Voice and Visual)	☐	☐
Rescue Equipment In Place	☐	☐
Required PPE Equipment in Place & Available	☐	☐
(Half Face Respirators, PIDs, Hardhat, Steel Toe Boots, Hearing Protection,	☐	☐
Gloves, Eye Protection)	☐	☐
Fire Protection Equipment Available	☐	☐
Standby Personnel Available	☐	☐
Pre-Entry Atmospheric Conditions Within Acceptable Levels	☐	☐
All Personnel Understand PID Action Levels	☐	☐
Entry Conditions Acceptable	☐	☐

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Atmospheric Hazards to be Monitored, and Acceptable Levels:

Oxygen	L.E.L	PID*	H2S	CO	Other	Other
>19.5%	<10%	<15ppm	<10 ppm	<35 ppm		
<23.5%						

* For PID Readings:			Then:
< 15 ppm			No Action Required
> 15 ppm	but	< 75 ppm	Evacuate work area or establish exclusion zone around work area and upgrade to Level C (half-face respirator with organic vapor/HEPA cartridges)
>75 ppm			Evacuate Work Area

Types and Quantities of Monitoring Equipment:
MultiRAE Plus multi-gas meter w/ 10.6 ev PID lamp and O2, H2S, CO, & LEL

Monitoring Instrument Calibration Data Log:

	Oxygen (%)	L.E.L (%)	H2S (ppm)	PID (ppm)	CO (ppm)
Calibration levels					
Readings after calibration					

Monitoring Schedule:
Prior to entry, monitors & equipment will be run & watched continuously with readings documented every **5** minutes for 2 consecutive readings. During CSE work, document results every 30 minutes. Double check that PID alarm levels have been set at lowest setting (15 ppm - action Level for half face respirators)

Gas Testing Logsheet:

Location	Time	Oxygen	L.E.L.	H2S	PID	CO

Entry/Attendant Personnel: All entrants & attendants listed below have completed confined space entry training.

Name	Entrant / Attendant	Entry Time	Exit Time	Entry Time	Exit Time	Entry Time	Exit Time	Entry Time	Exit Time	Entry Time	Exit Time

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Signatures: Sign at end of each shift and save permit in project file for 1 year.

Entrant Name (Print)	Entrant Name (sign)	Date
Attendant Name (Print)	Attendant Name (sign)	Date
Supervisor Name (Print)	Supervisor Name (sign)	Date

FORM 3

Dashboard Safety Card

Boeing Developmental Center
9725 E Marginal Way S, Tukwila, WA 98108

STANDARD WORK PRACTICES

Health and Safety is **EVERYONE'S** responsibility and **NUMBER ONE PRIORITY**

- Regulatory compliance is **MANDATORY** – No work will begin and/or work will immediately stop unless the answer to the following question is a positive **"YES"** – AM I IN COMPLIANCE WITH ALL REGULATORY, FACILITY, PROJECT, AND HEALTH AND SAFETY REQUIREMENTS?

- All incidents and regulatory inspections must be reported immediately

    - **Incident definition**: Any event condition, or action (including near misses) that affects the safety of personnel, does not follow rules and guidelines for work implementation and regulatory compliance onsite

- Incident examples:
    - Spilled liquid in an uncontrolled environment
    - Working without correct/complete permit in place
    - Performing hot works without a "Hot Works Permit"

Before starting work, **HAVE YOU?** :

1. Reviewed the Health and Safety Plan prior to performing work?
2. Performed a Health and Safety "Tail Gate Meeting" and filled out the sign-in form prior to starting work?
3. Reviewed scope of work documents, permits, and other related items prior to performing work?
4. Provided correct Personal Protective Equipment (PPE) for the work to be performed?
5. Followed Lock Out/Tag Out Procedures for equipment?

IF YOU ARE UNSURE OF SAFETY PRACTICES FOR THE PARTICULAR WORK INVOLVED – GET CLARIFICATION PRIOR TO STARTING WORK

Working with subcontractors:

- Review Health and Safety Plan with subcontractor
- Review site "Incident Reporting Procedures"
- Perform "Tail Gate Safety Meeting" with subcontractor

SAFETY AND REGULATORY COMPLIANCE IS MY PRIORITY AND I MUST TAKE THE NECESSARY STEPS TO PROVIDE THIS SERVICE

I AM RESPONSIBLE AND I HAVE THE AUTHORITY TO STOP WORK IF THE TASK DOES NOT MEET THE SAFETY AND REGULATORY REQUIREMENTS

SAFETY DASHBOARD CARD

EMERGENCY AND INCIDENT REPORTING PROCEDURES

EMERGENCY PHONE NUMBER:

(206) 655-2222 Fire, Ambulance, Police, Spill Reporting

If using a cell phone be prepared to include the site and work location address

SITE ADDRESS: **9725 E Marginal Way S, Tukwila, WA 98108**
WORK LOCATION: **Boeing Developmental Center**

AN EMERGENCY IS AN UNCONTROLLED SITUATION, AN INJURY THAT IS MAJOR OR LIFE THREATENING, FIRE, OR ANYTHING THAT REQUIRES IMMEDIATE ASSISTANCE.

EMERGENCY REPORTING:
Contact the Emergency Response (fire, ambulance, police) at **(206) 655-2222**
Follow Incident Reporting procedures listed below

INCIDENT REPORTING:
Respond to the incident and get it under control. Contact the following by e-mail and brief phone message (**MUST DO BOTH**):

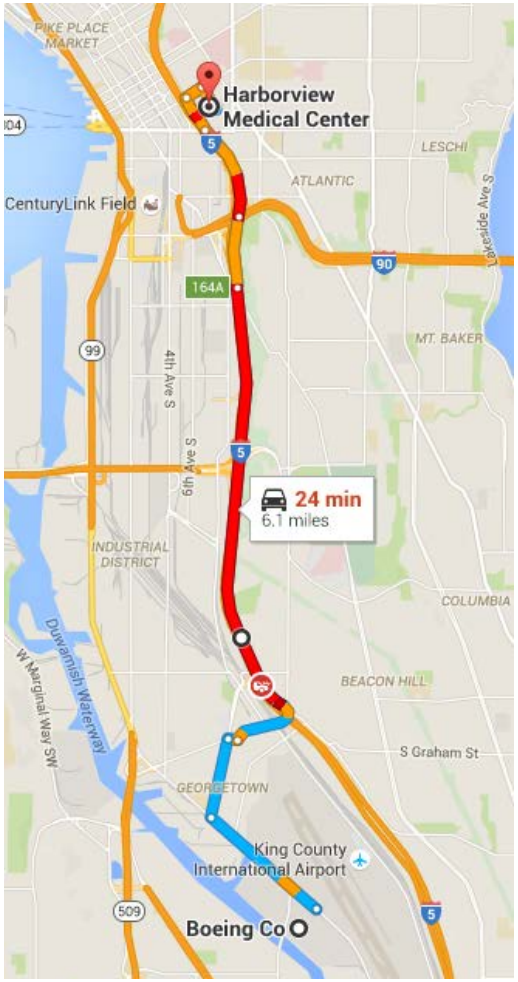
Name	Email Address	Phone Number	Position
Jennifer Parsons	jennifer.a.parsons@boeing.com	206-715-7981	Boeing Site Focal
Lindsey Mahrt	lindsey.e.mahrt@boeing.com	206-327-0404	Boeing Project Manager
Ken Reid	kreid@landauinc.com	206-579-4449	Consultant Project Manager
Christine Kimmel	ckimmel@landauinc.com	206-786-3801	Consultant H&S Manager

When leaving the voice message or email state the following:

1. **Date:** The date the incident occurred
2. **Time:** The approximate time the incident occurred
3. **Location:** Where the incident occurred, i.e.; Admin Compound…

After the incident is under control, the sequence of events will be recorded, including probable cause, people who responded to the incident, the extents of the incident, and relevant dates and times

ROUTE TO HOSPITAL
Harborview Medical Center



Boeing Co
9725 East Marginal Way South, Seattle, WA 98108

Get on I-5 N from E Marginal Way S and S Boeing Access Rd — 4 min (1.7 mi)

1. Head northeast on S 96th Pl toward E Marginal Way S — 36 ft
2. Turn right at the 1st cross street onto E Marginal Way S — 0.7 mi
3. Use the left 2 lanes to turn slightly left to stay on E Marginal Way S — 138 ft
4. Use the left 2 lanes to turn left at the 1st cross street onto S Boeing Access Rd — 0.5 mi
5. Use the right 2 lanes to take the ramp to Seattle — 0.5 mi

Continue on I-5 N to Seattle. Take exit 164A from I-5 N — 9 min (7.2 mi)

6. Merge onto I-5 N — 5.9 mi
7. Use the 2nd from the right lane to take exit 164A for Dearborn St toward James St/Madison St — 0.4 mi
8. Keep left to continue toward James St — 0.6 mi
9. Keep right, follow signs for James St — 0.2 mi

Continue on James St. Drive to 8th Ave — 2 min (0.3 mi)

10. Turn right onto James St — 0.1 mi
11. Turn right onto 9th Ave — 302 ft
12. Turn right at the 1st cross street onto Jefferson St — 364 ft
13. Continue onto 8th Ave — 318 ft

Harborview Medical Center
325 9th Ave, Seattle, WA 98104

APPENDIX D

Historical Groundwater Analytical Data Tables

- Table D-1. Groundwater General Chemistry Analytical Results
- Table D-2. Groundwater Dissolved Gases Analytical Results
- Table D-3. Groundwater Total/Dissolved Metals Analytical Results
- Table D-4. Groundwater Polychlorinated Biphenyl Analytical Results
- Table D-5. Groundwater Pesticide Analytical Results
- Table D-6. Groundwater Semivolatile Organic Compound Analytical Results
- Table D-7. Groundwater Petroleum Hydrocarbon Analytical Results
- Table D-8. Groundwater Volatile Organic Compound Analytical Results

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
AOC-01/02																			
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	--	--	--	--	1000 U	--	--	--	--	--	--	--	--	--	--
AOC-5																			
AOC5	AOC5-061709	N	6/17/2009	--	--	--	--	**563000**	--	--	--	--	--	**7.11**	--	--	**411**	--
BDC-101	BDC-101-020429	N	4/29/2002	--	**406**	**1.7**	--	--	--	--	--	--	**215.3**	**6.66**	--	--	--	--
BDC-101	BDC-101-020603	N	6/3/2002	--	**441**	**1.89**	--	--	--	--	--	--	**71.8**	**7.09**	--	--	--	--
BDC-101	BDC-101-020701	N	7/1/2002	--	**466**	**1.16**	--	--	--	--	--	--	**176.3**	**6.74**	--	--	--	--
BDC-101	BDC-101-020801	N	8/1/2002	--	**432**	**0.9**	--	--	--	--	--	--	**219.5**	**6.67**	--	--	--	--
BDC-101	BDC-101-030310	N	3/10/2003	--	**433**	**0.51**	--	--	--	--	--	--	**167**	**6.89**	--	--	--	--
BDC-101	BDC-101-031119	N	11/19/2003	--	--	--	--	--	**1.1**	**1.1**	0.01 U	--	--	--	**16**	--	--	--
BDC-101	BDC-101-051121	N	11/21/2005	--	--	--	--	--	**4.4**	--	--	--	--	--	**34.3**	**2.05**	--	--
BDC-101	BDC-101-060515	N	5/15/2006	--	--	--	--	--	**17.8**	**17.9**	**0.059**	--	--	--	**64.1**	--	--	--
BDC-101	BDC-101-061120	N	11/20/2006	--	--	--	--	--	**0.122**	**0.138**	**0.016**	--	--	--	**8.7**	--	--	--
BDC-101	BDC-101-070220	N	2/20/2007	--	--	--	--	--	**15.0**	--	**0.047**	--	--	--	**50.0**	--	--	--
BDC-101	BDC-101-070319	N	3/19/2007	--	--	--	--	--	**8.83**	--	**0.037**	--	--	--	**38.5**	--	--	--
BDC-101	BDC-101-070424	N	4/24/2007	--	--	--	--	--	**9.59**	**9.63**	**0.041**	--	--	--	**34.1**	--	--	--
BDC-101	BDC-101-070517	N	5/17/2007	--	--	--	--	--	**9.95**	**10**	**0.046**	--	--	--	**35.7**	--	--	--
BDC-101	BDC-101-071126	N	11/26/2007	--	--	--	--	--	**5.88**	**5.91**	**0.032**	--	--	--	**26.8**	--	--	--
BDC-101	BDC-101-080218	N	2/18/2008	--	--	--	--	--	**8.1**	**8.14**	**0.04**	--	--	--	**31.5**	--	--	--
BDC-101	BDC-101-080327	N	3/27/2008	--	--	--	--	--	**9.3**	--	0.10 U	--	--	--	**40.0**	--	--	--
BDC-101	BDC-101-080515	N	5/15/2008	--	--	--	--	--	**6.8**	--	0.10 U	--	--	--	**24.6**	--	--	--
BDC-101	BDC-101-080716	N	7/16/2008	--	--	--	--	--	**5.3**	--	0.1 U	--	--	--	**21.8**	--	--	--
BDC-101	BDC-101-080915	N	9/15/2008	--	--	--	--	--	**5.33**	--	**0.023**	--	--	--	**28.7**	--	--	--
BDC-101	BDC-101-081120	N	11/20/2008	--	--	--	--	--	**2.9**	--	0.1 U	--	--	--	**17.1**	--	--	--
BDC-101	BDC-101-090116	N	1/16/2009	--	--	--	--	--	**4.4**	--	**0.042**	--	--	--	**29.5**	--	--	--
BDC-101	BDC-101-090211	N	2/11/2009	--	--	--	--	--	**8.5**	--	0.1 U	--	--	--	**39.6**	--	--	--
BDC-101	BDC-101-090309	N	3/9/2009	--	--	--	--	--	**9.4**	--	0.1 U	--	--	--	**46.8**	--	--	--
BDC-101	BDC-101-090416	N	4/16/2009	--	--	--	--	--	**9**	--	0.1 U	--	--	--	**36**	--	--	--
BDC-101	BDC-101-090514	N	5/14/2009	--	--	--	--	--	**13**	--	0.1 U	--	--	--	**44.4**	--	--	--
BDC-101	BDC-101-090717	N	7/17/2009	--	--	--	--	--	**12.6**	--	0.1 U	--	--	--	**49**	--	--	--
BDC-101	BDC-101-090909	N	9/9/2009	--	--	--	--	--	**6.2**	--	0.1 U	--	--	--	**31.7**	--	--	--
BDC-101	BDC-101-091112	N	11/12/2009	--	--	--	--	--	**11.3**	--	0.1 U	--	--	--	**36.7**	--	--	--
BDC-101	BDC-101-100217	N	2/17/2010	--	--	--	--	--	**13.9**	--	0.1 U	--	--	--	**48.7**	--	--	--
BDC-101	BDC-101-100517	N	5/17/2010	--	--	--	--	--	**20.7**	--	1 U	--	--	--	**58.7**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-101	BDC-101-100816	N	8/16/2010	--	--	--	--	--	**15.6**	--	0.1 U	--	--	--	**56.9**	--	--	--
BDC-101	BDC-101-101108	N	11/8/2010	--	--	--	--	--	**2.2**	--	0.1 U	--	--	--	**14.7**	--	--	--
BDC-101	BDC-101-110216	N	2/16/2011	--	--	--	--	--	**23.9**	--	0.1 U	--	--	--	**68.2**	--	--	--
BDC-101	BDC-101-110503	N	5/3/2011	--	--	--	--	--	**23.7**	--	0.1 U	--	--	--	**66.2**	--	--	--
BDC-101	BDC-101-110801	N	8/1/2011	--	--	--	--	--	**17.9**	--	0.1 U	--	--	--	**48.1**	--	--	--
BDC-101	BDC-101-111101	N	11/1/2011	**0.015**	--	--	--	--	**6.1**	--	0.1 U	--	--	--	**24.8**	--	--	--
BDC-101	BDC-101-120219	N	2/19/2012	--	--	--	--	--	**6.6**	--	--	--	--	--	**27.7**	--	--	--
BDC-101	BDC-101-120503	N	5/3/2012	--	--	--	--	--	**16.9**	--	0.1 U	--	--	--	**51.2**	--	--	--
BDC-101	BDC-101-120904	N	9/4/2012	--	--	--	--	--	**13.8 J**	--	0.1 U	--	--	--	**36**	--	--	--
BDC-101	BDC-101-121113	N	11/13/2012	--	--	--	--	--	**10.3 J**	--	0.1 U	--	--	--	**40.4**	--	--	--
BDC-101	BDC-101-130220	N	2/20/2013	--	--	--	--	--	**21.3**	--	0.1 U	--	--	--	**68**	--	--	--
BDC-101	BDC-101-130520	N	5/20/2013	--	--	--	--	--	**17 J**	--	0.1 U	--	--	--	**52.9**	--	--	--
BDC-101	BDC-101-130828	N	8/28/2013	--	--	--	--	--	**10.5**	--	0.1 U	--	--	--	**41.5**	--	--	--
BDC-101	BDC-101-131119	N	11/19/2013	--	--	--	--	--	**7.6**	--	0.1 U	--	--	--	**28.3**	--	--	--
BDC-101	BDC-101-140211	N	2/11/2014	--	--	--	--	--	**7.7 J**	--	0.1 UJ	--	--	--	**29.1**	--	--	--
BDC-101	BDC-101-140506	N	5/6/2014	--	--	--	--	--	**19.6**	--	0.1 U	--	--	--	**64.2**	--	--	--
BDC-101	BDC-101-140807	N	8/7/2014	--	--	--	--	--	**17.2**	--	0.1 U	--	--	--	**51.4**	--	--	--
BDC-101	BDC-101-141104	N	11/4/2014	--	--	--	--	--	**7.8**	--	0.1 U	--	--	--	**29.7**	--	--	--
BDC-101	BDC-101-150121	N	1/21/2015	--	--	--	--	--	**21.3**	--	0.1 U	--	--	--	**44.6**	--	--	--
BDC-101	BDC-101-150428	N	4/28/2015	--	--	--	--	--	**19.1**	--	0.1 U	--	--	--	**48.4**	--	--	--
BDC-101	BDC-101-150720	N	7/20/2015	--	--	--	--	--	**19.7**	--	0.1 U	--	--	--	**57.2**	--	--	--
BDC-101	BDC-101-151026	N	10/26/2015	--	--	--	--	--	**8.8**	--	0.1 U	--	--	--	**38.6**	--	--	--
BDC-101	BDC-101-160127	N	1/27/2016	--	--	--	--	--	**12.3**	--	0.1 U	--	--	--	**40.3**	--	--	--
BDC-101	BDC-101-160413	N	4/13/2016	--	--	--	--	--	**23.7**	--	0.1 U	--	--	--	**65.4**	--	--	--
BDC-101	BDC-101-160809	N	8/9/2016	--	--	--	--	--	**16.1**	--	0.1 U	--	--	--	**45.8**	--	--	--
BDC-101	BDC-101-161101	N	11/1/2016	--	--	--	--	--	**2.3**	--	0.1 U	--	--	--	**20**	--	--	--
BDC-101	BDC-101-170207	N	2/7/2017	--	--	--	--	--	**17.1**	--	0.1 U	--	--	--	**54.3**	--	--	--
BDC-101	BDC-101-170503	N	5/3/2017	--	--	--	--	--	**24.5**	--	0.1 U	--	--	--	**65.5**	--	--	--
BDC-101	BDC-101-170801	N	8/1/2017	--	--	--	--	--	**19.3**	--	0.1 U	--	--	--	**58.3**	--	--	--
BDC-101	BDC-101-171107	N	11/7/2017	--	--	--	--	--	**12.3**	--	0.10 U	--	--	--	**40.4**	--	--	--
BDC-101	BDC-101-180205	N	2/5/2018	--	--	--	--	--	**9.64**	--	0.100 U	--	--	--	**28.9**	--	--	--
BDC-101	BDC-101-180501	N	5/1/2018	--	--	--	--	--	**15.9 J**	--	0.100 U	--	--	--	**44.5**	--	--	--
BDC-101	BDC-101-180806	N	8/6/2018	--	--	--	--	--	**11.9 J**	--	0.100 UJ	--	--	--	**36.4**	--	--	--
BDC-101	BDC-101-181105	N	11/5/2018	--	--	--	--	--	**6.90 J**	--	0.100 U	--	--	--	**26.1**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-101	BDC-101-190206	N	2/6/2019	--	--	--	--	--	**7.73**	--	0.100 U	--	--	--	**30.6**	--	--	--
BDC-101	BDC-101-190502	N	5/2/2019	--	--	--	--	--	**11.2**	--	0.100 U	--	--	--	**64.5 J**	--	--	--
BDC-101	BDC-101-191105	N	11/5/2019	--	--	--	--	--	**7.73**	--	0.100 U	--	--	--	**28.5**			
BDC-102	BDC-102-020429	N	4/29/2002	--	**814**	**0.33**	--	--	--	--	--	--	**11.35**	**6.7**	--	--	--	--
BDC-102	BDC-102-020603	N	6/3/2002	--	**834**	**1**	--	--	--	--	--	--	**-127.2**	**6.85**	--	--	--	--
BDC-102	BDC-102-020701	N	7/1/2002	--	**757**	**0.25**	--	--	--	--	--	--	**19.6**	**6.73**	--	--	--	--
BDC-102	BDC-102-020801	N	8/1/2002	--	**783**	**0.96**	--	--	--	--	--	--	**43.3**	**6.79**	--	--	--	--
BDC-102	BDC-102-030310	N	3/10/2003	--	**759**	**0.3**	--	--	--	--	--	--	**74**	**6.88**	--	--	--	--
BDC-102	BDC-102-031119	N	11/19/2003	--	--	--	--	--	**0.19**	**0.2**	**0.011**	--	--	--	**46**	--	--	--
BDC-102	BDC-102-051121	N	11/21/2005	--	--	--	--	--	**4.4**	--	--	--	--	--	**34**	**18.4**	--	--
BDC-102	BDC-102-060515	N	5/15/2006	--	--	--	--	--	**4.72**	**4.9**	**0.175**	--	--	--	**35.7**	--	--	--
BDC-102	BDC-102-061120	N	11/20/2006	--	--	--	--	--	0.25 U	0.25 U	0.25 U	--	--	--	**9.2**	--	--	--
BDC-102	BDC-102-070220	N	2/20/2007	--	--	--	--	--	**0.749**	--	**0.027**	--	--	--	**25.3**	--	--	--
BDC-102	BDC-102-070319	N	3/19/2007	--	--	--	--	--	**0.938**	--	**0.072**	--	--	--	**31.0**	--	--	--
BDC-102	BDC-102-070424	N	4/24/2007	--	--	--	--	--	**1.94**	**1.99**	**0.051**	--	--	--	**40.4**	--	--	--
BDC-102	BDC-102-070517	N	5/17/2007	--	--	--	--	--	**2.78**	**2.89**	**0.108**	--	--	--	**33.9**	--	--	--
BDC-102	BDC-102-071126	N	11/26/2007	--	--	--	--	--	**1.03**	**1.28**	**0.247**	--	--	--	**55.7**	--	--	--
BDC-102	BDC-102-080218	N	2/18/2008	--	--	--	--	--	**3.91**	**3.96**	**0.054**	--	--	--	**42.8**	--	--	--
BDC-102	BDC-102-080327	N	3/27/2008	--	--	--	--	--	**1.3**	--	0.10 U	--	--	--	**17.9**	--	--	--
BDC-102	BDC-102-080515	N	5/15/2008	--	--	--	--	--	**3**	--	0.10 U	--	--	--	**19.2**	--	--	--
BDC-102	BDC-102-080716	N	7/16/2008	--	--	--	--	--	**2.5**	--	0.1 U	--	--	--	**13.7**	--	--	--
BDC-102	BDC-102-080915	N	9/15/2008	--	--	--	--	--	**4.28**	--	**0.056**	--	--	--	**31.6**	--	--	--
BDC-102	BDC-102-081120	N	11/20/2008	--	--	--	--	--	**0.4**	--	0.1 U	--	--	--	**5.6**	--	--	--
BDC-102	BDC-102-090116	N	1/16/2009	--	--	--	--	--	0.1 U	--	**0.2**	--	--	--	**8.3**	--	--	--
BDC-102	BDC-102-090211	N	2/11/2009	--	--	--	--	--	**2.4**	--	0.1 U	--	--	--	**20.4**	--	--	--
BDC-102	BDC-102-090309	N	3/9/2009	--	--	--	--	--	**0.9**	--	0.1 U	--	--	--	**8.7**	--	--	--
BDC-102	BDC-102-090416	N	4/16/2009	--	--	--	--	--	**0.6**	--	0.1 U	--	--	--	**8.3**	--	--	--
BDC-102	BDC-102-090514	N	5/14/2009	--	--	--	--	--	**0.9**	--	0.1 U	--	--	--	**9.8**	--	--	--
BDC-102	BDC-102-090717	N	7/17/2009	--	--	--	--	--	**4.9**	--	0.1 U	--	--	--	**28.6**	--	--	--
BDC-102	BDC-102-090909	N	9/9/2009	--	--	--	--	--	**0.4**	--	0.1 U	--	--	--	**5.5**	--	--	--
BDC-102	BDC-102-091112	N	11/12/2009	--	--	--	--	--	**0.2**	--	0.1 U	--	--	--	**2.4**	--	--	--
BDC-102	BDC-102-100217	N	2/17/2010	--	--	--	--	--	**3.4**	--	**0.2**	--	--	--	**17.2**	--	--	--
BDC-102	BDC-102-100517	N	5/17/2010	--	--	--	--	--	**8.4**	--	1 U	--	--	--	**30.1**	--	--	--
BDC-102	BDC-102-100816	N	8/16/2010	--	--	--	--	--	**8.9**	--	0.1 U	--	--	--	**27.8**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-102	BDC-102-101108	N	11/8/2010	--	--	--	--	--	**0.4**	--	0.1 U	--	--	--	**6.9**	--	--	--
BDC-102	BDC-102-110216	N	2/16/2011	--	--	--	--	--	**3.5**	--	0.1 U	--	--	--	**43.3**	--	--	--
BDC-102	BDC-102-110503	N	5/3/2011	--	--	--	--	--	**12.1**	--	0.1 U	--	--	--	**32.4**	--	--	--
BDC-102	BDC-102-110801	N	8/1/2011	--	--	--	--	--	**13.6**	--	0.1 U	--	--	--	**28.7**	--	--	--
BDC-102	BDC-102-111101	N	11/1/2011	**3.6**	--	--	--	--	**9.8**	--	0.1 U	--	--	--	**30.9**	--	--	--
BDC-102	BDC-102-120219	N	2/19/2012	--	--	--	--	--	**2.4**	--	--	--	--	--	**15.4**	--	--	--
BDC-102	BDC-102-120503	N	5/3/2012	--	--	--	--	--	**12.8**	--	0.1 U	--	--	--	**40.2**	--	--	--
BDC-102	BDC-102-120904	N	9/4/2012	--	--	--	--	--	**13.2 J**	--	5 UJ	--	--	--	**39.2**	--	--	--
BDC-102	BDC-102-121113	N	11/13/2012	--	--	--	--	--	**1.7**	--	0.1 U	--	--	--	**27.7**	--	--	--
BDC-102	BDC-102-130220	N	2/20/2013	--	--	--	--	--	**18.4**	--	0.1 U	--	--	--	**58.5**	--	--	--
BDC-102	BDC-102-130520	N	5/20/2013	--	--	--	--	--	**20 J**	--	0.1 U	--	--	--	**62.2**	--	--	--
BDC-102	BDC-102-130828	N	8/28/2013	--	--	--	--	--	**12.2**	--	0.1 U	--	--	--	**39.1**	--	--	--
BDC-102	BDC-102-131119	N	11/19/2013	--	--	--	--	--	**10.6**	--	0.1 U	--	--	--	**43.4**	--	--	--
BDC-102	BDC-102-140211	N	2/11/2014	--	--	--	--	--	**19.6 J**	--	0.1 UJ	--	--	--	**63**	--	--	--
BDC-102	BDC-102-140506	N	5/6/2014	--	--	--	--	--	**14.8**	--	0.1 U	--	--	--	**56.1**	--	--	--
BDC-102	BDC-102-140807	N	8/7/2014	--	--	--	--	--	**26.7**	--	0.1 U	--	--	--	**65.8**	--	--	--
BDC-102	BDC-102-141104	N	11/4/2014	--	--	--	--	--	**22.4**	--	0.1 U	--	--	--	**55.9**	--	--	--
BDC-102	BDC-102-150121	N	1/21/2015	--	--	--	--	--	**12.9**	--	0.1 U	--	--	--	**49.7**	--	--	--
BDC-102	BDC-102-150428	N	4/28/2015	--	--	--	--	--	**23.1**	--	0.1 U	--	--	--	**77.5**	--	--	--
BDC-102	BDC-102-150720	N	7/20/2015	--	--	--	--	--	**15.5**	--	0.1 U	--	--	--	**63.3**	--	--	--
BDC-102	BDC-102-151026	N	10/26/2015	--	--	--	--	--	**10.9**	--	0.1 U	--	--	--	**47.5**	--	--	--
BDC-102	BDC-102-160127	N	1/27/2016	--	--	--	--	--	**0.62**	--	0.1 U	--	--	--	**11.9**	--	--	--
BDC-102	BDC-102-160413	N	4/13/2016	--	--	--	--	--	**12.8**	--	0.1 U	--	--	--	**43.1**	--	--	--
BDC-102	BDC-102-160809	N	8/9/2016	--	--	--	--	--	**14**	--	0.1 U	--	--	--	**42.6**	--	--	--
BDC-102	BDC-102-161101	N	11/1/2016	--	--	--	--	--	**0.1**	--	0.1 U	--	--	--	**1.4**	--	--	--
BDC-102	BDC-102-170207	N	2/7/2017	--	--	--	--	--	**4.9**	--	0.1 U	--	--	--	**23.8**	--	--	--
BDC-102	BDC-102-170503	N	5/3/2017	--	--	--	--	--	**25.5**	--	0.1 U	--	--	--	**42.9**	--	--	--
BDC-102	BDC-102-170801	N	8/1/2017	--	--	--	--	--	**37.1**	--	0.1 U	--	--	--	**52.4**	--	--	--
BDC-102	BDC-102-171107	N	11/7/2017	--	--	--	--	--	**6.8**	--	0.10 U	--	--	--	**28.3**	--	--	--
BDC-102	BDC-102-180205	N	2/5/2018	--	--	--	--	--	**0.718**	--	**0.170**	--	--	--	**8.15**	--	--	--
BDC-102	BDC-102-180501	N	5/1/2018	--	--	--	--	--	**13.4 J**	--	0.100 U	--	--	--	**29.5**	--	--	--
BDC-102	BDC-102-180806	N	8/6/2018	--	--	--	--	--	**15.7 J**	--	0.100 UJ	--	--	--	**31.7**	--	--	--
BDC-102	BDC-102-181105	N	11/5/2018	--	--	--	--	--	**1.46**	--	0.100 U	--	--	--	**16.4**	--	--	--
BDC-102	BDC-102-190206	N	2/6/2019	--	--	--	--	--	**1.53**	--	**0.154**	--	--	--	**15.2**	--	--	--

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Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-102	BDC-102-190502	N	5/2/2019	--	--	--	--	--	**9.63**	--	0.100 U	--	--	--	**47.7**	--	--	--
BDC-102	BDC-102-191105	N	11/5/2019	--	--	--	--	--	**8.12**	--	0.100 U	--	--	--	**33.8**	--	--	--
BDC-103	BDC-103-020429	N	4/29/2002	--	**333**	**0.21**	--	--	--	--	--	--	**44.2**	**6.75**	--	--	--	--
BDC-103	BDC-103-020603	N	6/3/2002	--	**315**	**0.39**	--	--	--	--	--	--	**-110.3**	**6.77**	--	--	--	--
BDC-103	BDC-103-020701	N	7/1/2002	--	**343**	**0.2**	--	--	--	--	--	--	**4.9**	**6.66**	--	--	--	--
BDC-103	BDC-103-020801	N	8/1/2002	--	**506**	**0.69**	--	--	--	--	--	--	**36.7**	**6.65**	--	--	--	--
BDC-103	BDC-103-030310	N	3/10/2003	--	**320**	**0.21**	--	--	--	--	--	--	**27**	**6.85**	--	--	--	--
BDC-103	BDC-103-031119	N	11/19/2003	--	--	--	--	--	**0.012**	**0.023**	**0.011**	--	--	--	**53**	--	--	--
BDC-103	BDC-103-051121	N	11/21/2005	--	--	--	--	--	1 U	--	--	--	--	--	**11.9**	**15.4**	--	--
BDC-103	BDC-103-060515	N	5/15/2006	--	--	--	--	--	0.01 U	**0.041 J**	**0.054**	--	--	--	**15.2**	--	--	--
BDC-103	BDC-103-DUP-060515	FD	5/15/2006	--	--	--	--	--	0.01 U	**0.057 J**	**0.064**	--	--	--	**15.3**	--	--	--
BDC-103	BDC-103-061120	N	11/20/2006	--	--	--	--	--	0.1 U	0.1 U	0.1 U	--	--	--	**28.3**	--	--	--
BDC-103	BDC-103-070220	N	2/20/2007	--	--	--	--	--	**60.8**	--	**11.1**	--	--	--	**99.2**	--	--	--
BDC-103	BDC-103-070319	N	3/19/2007	--	--	--	--	--	**27.9**	--	**8.28**	--	--	--	**141**	--	--	--
BDC-103	BDC-103-070424	N	4/24/2007	--	--	--	--	--	**7.54**	**11.1**	**3.56**	--	--	--	**59.2**	--	--	--
BDC-103	BDC-103-070517	N	5/17/2007	--	--	--	--	--	**0.138**	**0.217**	**0.079**	--	--	--	**169**	--	--	--
BDC-103	BDC-103-071126	N	11/26/2007	--	--	--	--	--	**0.063**	**0.112**	**0.049**	--	--	--	**49.1**	--	--	--
BDC-103	BDC-103-080218	N	2/18/2008	--	--	--	--	--	**7.75**	**7.88**	**0.134**	--	--	--	**163**	--	--	--
BDC-103	BDC-103-080327	N	3/27/2008	--	--	--	--	--	**54.1**	--	**18**	--	--	--	**115.0**	--	--	--
BDC-103	BDC-103-080515	N	5/15/2008	--	--	--	--	--	0.1 U	--	0.10 U	--	--	--	**192**	--	--	--
BDC-103	BDC-103-080716	N	7/16/2008	--	--	--	--	--	**56.1**	--	**16.6**	--	--	--	**149**	--	--	--
BDC-103	BDC-103-080915	N	9/15/2008	--	--	--	--	--	**0.33**	--	**0.218**	--	--	--	**218**	--	--	--
BDC-103	BDC-103-081120	N	11/20/2008	--	--	--	--	--	**152**	--	**12.5**	--	--	--	**120**	--	--	--
BDC-103	BDC-103-090116	N	1/16/2009	--	--	--	--	--	**193**	--	**2.32**	--	--	--	**62.5**	--	--	--
BDC-103	BDC-103-090211	N	2/11/2009	--	--	--	--	--	**82**	--	**6.7**	--	--	--	**178**	--	--	--
BDC-103	BDC-103-090309	N	3/9/2009	--	--	--	--	--	**47.3**	--	**2.4**	--	--	--	**192**	--	--	--
BDC-103	BDC-103-090416	N	4/16/2009	--	--	--	--	--	**64.8**	--	**5.6**	--	--	--	**194**	--	--	--
BDC-103	BDC-103-090514	N	5/14/2009	--	--	--	--	--	**49.8**	--	**4.8**	--	--	--	**222**	--	--	--
BDC-103	BDC-103-090717	N	7/17/2009	--	--	--	--	--	**26.6**	--	**2**	--	--	--	**104**	--	--	--
BDC-103	BDC-103-090909	N	9/9/2009	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**134**	--	--	--
BDC-103	BDC-103-091112	N	11/12/2009	--	--	--	--	--	**94.1**	--	**7.7**	--	--	--	**71.7**	--	--	--
BDC-103	BDC-103-100217	N	2/17/2010	--	--	--	--	--	**123**	--	**1.1**	--	--	--	**60.3**	--	--	--
BDC-103	BDC-103-100517	N	5/17/2010	--	--	--	--	--	**67.9**	--	**2.6**	--	--	--	**71.6**	--	--	--
BDC-103	BDC-103-100816	N	8/16/2010	--	--	--	--	--	**2.4**	--	**0.1**	--	--	--	**72.5**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-103	BDC-103-101108	N	11/8/2010	--	--	--	--	--	**55.8**	--	**1.5**	--	--	--	**123**	--	--	--
BDC-103	BDC-103-110216	N	2/16/2011	--	--	--	--	--	**133**	--	**0.6**	--	--	--	**74.6**	--	--	--
BDC-103	BDC-103-110503	N	5/3/2011	--	--	--	--	--	**140**	--	**0.2**	--	--	--	**74.4**	--	--	--
BDC-103	BDC-103-110801	N	8/1/2011	--	--	--	--	--	**57.6**	--	0.1 U	--	--	--	**63.2**	--	--	--
BDC-103	BDC-103-111101	N	11/1/2011	**35.1**	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**8.1**	--	--	--
BDC-103	BDC-103-120219	N	2/19/2012	--	--	--	--	--	**143**	--	--	--	--	--	**57.1**	--	--	--
BDC-103	BDC-103-120503	N	5/3/2012	--	--	--	--	--	**149**	--	**0.83**	--	--	--	**56.2**	--	--	--
BDC-103	BDC-103-120904	N	9/4/2012	--	--	--	--	--	**7.2 J**	--	0.1 U	--	--	--	**66.9**	--	--	--
BDC-103	BDC-103-121113	N	11/13/2012	--	--	--	--	--	**165 J**	--	**2.8**	--	--	--	**93.6**	--	--	--
BDC-103	BDC-103-130220	N	2/20/2013	--	--	--	--	--	**161**	--	**0.6**	--	--	--	**51.6**	--	--	--
BDC-103	BDC-103-130520	N	5/20/2013	--	--	--	--	--	**161 J**	--	0.1 U	--	--	--	**47.1**	--	--	--
BDC-103	BDC-103-130828	N	8/28/2013	--	--	--	--	--	**17.8**	--	**0.16**	--	--	--	**54.2**	--	--	--
BDC-103	BDC-103-131119	N	11/19/2013	--	--	--	--	--	**154**	--	**2.6**	--	--	--	**51**	--	--	--
BDC-103	BDC-103-140211	N	2/11/2014	--	--	--	--	--	**79.9 J**	--	**0.15 J**	--	--	--	**99.2**	--	--	--
BDC-103	BDC-103-140506	N	5/6/2014	--	--	--	--	--	**215**	--	0.1 U	--	--	--	**59.8**	--	--	--
BDC-103	BDC-103-140807	N	8/7/2014	--	--	--	--	--	**111**	--	0.1 U	--	--	--	**59.7**	--	--	--
BDC-103	BDC-103-141104	N	11/4/2014	--	--	--	--	--	**151**	--	**0.68**	--	--	--	**66.7**	--	--	--
BDC-103	BDC-103-150121	N	1/21/2015	--	--	--	--	--	**137**	--	**0.27**	--	--	--	**69.1**	--	--	--
BDC-103	BDC-103-150428	N	4/28/2015	--	--	--	--	--	**74.8**	--	0.1 U	--	--	--	**90.3**	--	--	--
BDC-103	BDC-103-150720	N	7/20/2015	--	--	--	--	--	**8.1**	--	0.1 U	--	--	--	**70.9**	--	--	--
BDC-103	BDC-103-151026	N	10/26/2015	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**0.55 J**	--	--	--
BDC-103	BDC-103-160127	N	1/27/2016	--	--	--	--	--	**32.5 J**	--	0.1 U	--	--	--	**102**	--	--	--
BDC-103	BDC-103-160413	N	4/13/2016	--	--	--	--	--	**102**	--	**0.43**	--	--	--	**51**	--	--	--
BDC-103	BDC-103-160809	N	8/9/2016	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**31.1**	--	--	--
BDC-103	BDC-103-DUP-160809	FD	8/9/2016	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**30.7**	--	--	--
BDC-103	BDC-103-161101	N	11/1/2016	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**0.68 J**	--	--	--
BDC-103	BDC-103-DUP-161101	FD	11/1/2016	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**0.61 J**	--	--	--
BDC-103	BDC-103-170207	N	2/7/2017	--	--	--	--	--	**194 J**	--	**0.15**	--	--	--	**47.4**	--	--	--
BDC-103	BDC-103-170503	N	5/3/2017	--	--	--	--	--	**215**	--	**0.4**	--	--	--	**49.4**	--	--	--
BDC-103	BDC-DUP2-170503	FD	5/3/2017	--	--	--	--	--	**201**	--	**0.39**	--	--	--	**49.5**	--	--	--
BDC-103	BDC-103-170801	N	8/1/2017	--	--	--	--	--	**172**	--	0.1 U	--	--	--	**64.4**	--	--	--
BDC-103	BDC-DUP1-170801	FD	8/1/2017	--	--	--	--	--	**178 J**	--	0.1 U	--	--	--	**65.1**	--	--	--
BDC-103	BDC-103-171107	N	11/7/2017	--	--	--	--	--	**71.0**	--	0.10 U	--	--	--	**73.2**	--	--	--
BDC-103	BDC-DUP2-171107	FD	11/7/2017	--	--	--	--	--	**73.2**	--	0.10 U	--	--	--	**80.6**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-103	BDC-103-180205	N	2/5/2018	--	--	--	--	--	**128**	--	**0.319**	--	--	--	**51.7**	--	--	--
BDC-103	BDC-DUP1-180205	FD	2/5/2018	--	--	--	--	--	**127**	--	**0.319**	--	--	--	**51.5**	--	--	--
BDC-103	BDC-103-180501	N	5/1/2018	--	--	--	--	--	**104 J**	--	0.100 U	--	--	--	**71.6**	--	--	--
BDC-103	BDC-DUP2-180501	FD	5/1/2018	--	--	--	--	--	**104 J**	--	0.100 U	--	--	--	**71.3**	--	--	--
BDC-103	BDC-103-180806	N	8/6/2018	--	--	--	--	--	**65.8**	--	0.100 U	--	--	--	**70.0**	--	--	--
BDC-103	BDC-DUP1-180806	FD	8/6/2018	--	--	--	--	--	**68.5**	--	0.100 U	--	--	--	**75.6**	--	--	--
BDC-103	BDC-103-181105	N	11/5/2018	--	--	--	--	--	**0.333**	--	0.100 U	--	--	--	**63.1 J**	--	--	--
BDC-103	BDC-DUP2-181105	FD	11/5/2018	--	--	--	--	--	**0.286**	--	0.100 U	--	--	--	**51.2 J**	--	--	--
BDC-103	BDC-103-190206	N	2/6/2019	--	--	--	--	--	**112**	--	**0.180**	--	--	--	**219**	--	--	--
BDC-103	BDC-DUP1-190206	FD	2/6/2019	--	--	--	--	--	**117 J**	--	**0.173**	--	--	--	**231**	--	--	--
BDC-103	BDC-103-190502	N	5/2/2019	--	--	--	--	--	**113**	--	0.100 U	--	--	--	**160**	--	--	--
BDC-103	BDC-DUP2-190502	FD	5/2/2019	--	--	--	--	--	**111**	--	0.100 U	--	--	--	**161**	--	--	--
BDC-103	BDC-103-191105	N	11/5/2019	--	--	--	--	--	**0.397 J**	--	0.100 U	--	--	--	**59.6**	--	--	--
BDC-103	BDC-DUP2-191105	FD	11/5/2019	--	--	--	--	--	0.100 UJ	--	0.100 U	--	--	--	**58.2**	--	--	--
BDC-104	BDC-104-080218	N	2/18/2008	--	--	--	--	--	**1.63**	**1.7**	**0.072**	--	--	--	**18.7**	--	--	--
BDC-104	BDC-104-080327	N	3/27/2008	--	--	--	--	--	**161**	--	**0.1**	--	--	--	**52.2**	--	--	--
BDC-104	BDC-104-080515	N	5/15/2008	--	--	--	--	--	**28.7**	--	**0.7**	--	--	--	**26.6**	--	--	--
BDC-104	BDC-104-080716	N	7/16/2008	--	--	--	--	--	**196**	--	**0.4**	--	--	--	**74.7**	--	--	--
BDC-104	BDC-104-080915	N	9/15/2008	--	--	--	--	--	**122**	--	**0.729**	--	--	--	**38.4**	--	--	--
BDC-104	BDC-104-081120	N	11/20/2008	--	--	--	--	--	**67.2**	--	0.1 U	--	--	--	**24.3**	--	--	--
BDC-104	BDC-104-090116	N	1/16/2009	--	--	--	--	--	**71.4**	--	**0.204**	--	--	--	**34.6**	--	--	--
BDC-104	BDC-104-090211	N	2/11/2009	--	--	--	--	--	**95.4 J**	--	**0.1**	--	--	--	**20.1**	--	--	--
BDC-104	BDC-104-090309	N	3/9/2009	--	--	--	--	--	**91.5**	--	0.1 U	--	--	--	**19.2**	--	--	--
BDC-104	BDC-104-090416	N	4/16/2009	--	--	--	--	--	**67.2**	--	0.1 U	--	--	--	**21.6**	--	--	--
BDC-104	BDC-104-090514	N	5/14/2009	--	--	--	--	--	**63.4**	--	0.1 U	--	--	--	**20.1**	--	--	--
BDC-104	BDC-104-090717	N	7/17/2009	--	--	--	--	--	**21**	--	**0.5**	--	--	--	**30.8**	--	--	--
BDC-104	BDC-104-090909	N	9/9/2009	--	--	--	--	--	**39.8**	--	**0.1**	--	--	--	**41.6**	--	--	--
BDC-104	BDC-104-091112	N	11/12/2009	--	--	--	--	--	**115**	--	**1.4**	--	--	--	**24.1**	--	--	--
BDC-104	BDC-104-100217	N	2/17/2010	--	--	--	--	--	**119**	--	**0.1**	--	--	--	**111**	--	--	--
BDC-104	BDC-104-100517	N	5/17/2010	--	--	--	--	--	**47.4**	--	1 U	--	--	--	**30.5**	--	--	--
BDC-104	BDC-104-100816	N	8/16/2010	--	--	--	--	--	**38.4**	--	**0.2**	--	--	--	**23.6**	--	--	--
BDC-104	BDC-104-101108	N	11/8/2010	--	--	--	--	--	**32.5**	--	0.1 U	--	--	--	**18.6**	--	--	--
BDC-104	BDC-104-110216	N	2/16/2011	--	--	--	--	--	**40**	--	0.1 U	--	--	--	**24.1**	--	--	--
BDC-104	BDC-104-110503	N	5/3/2011	--	--	--	--	--	**31.3**	--	0.1 U	--	--	--	**26.8**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-104	BDC-104-110801	N	8/1/2011	--	--	--	--	--	**11.7**	--	0.1 U	--	--	--	**21.2**	--	--	--
BDC-104	BDC-104-111101	N	11/1/2011	**6.97**	--	--	--	--	**14.6**	--	0.1 U	--	--	--	**18.7**	--	--	--
BDC-104	BDC-104-120219	N	2/19/2012	--	--	--	--	--	**21.6**	--	--	--	--	--	**29.2**	--	--	--
BDC-104	BDC-104-120503	N	5/3/2012	--	--	--	--	--	**23.1**	--	0.1 U	--	--	--	**26.5**	--	--	--
BDC-104	BDC-104-120904	N	9/4/2012	--	--	--	--	--	**12.3 J**	--	0.1 U	--	--	--	**22.1**	--	--	--
BDC-104	BDC-104-121113	N	11/13/2012	--	--	--	--	--	**0.8**	--	0.1 U	--	--	--	**5.1**	--	--	--
BDC-104	BDC-104-130220	N	2/20/2013	--	--	--	--	--	**2.5**	--	0.1 U	--	--	--	**3.6**	--	--	--
BDC-104	BDC-104-130520	N	5/20/2013	--	--	--	--	--	**20 J**	--	0.1 U	--	--	--	**20.8**	--	--	--
BDC-104	BDC-104-130828	N	8/28/2013	--	--	--	--	--	**16.4**	--	0.1 U	--	--	--	**35.3**	--	--	--
BDC-104	BDC-104-131119	N	11/19/2013	--	--	--	--	--	**0.47 J**	--	0.1 U	--	--	--	**3.1**	--	--	--
BDC-104	BDC-104-140211	N	2/11/2014	--	--	--	--	--	**0.54 J**	--	0.1 UJ	--	--	--	**3.4**	--	--	--
BDC-104	BDC-104-140506	N	5/6/2014	--	--	--	--	--	**0.35**	--	0.1 U	--	--	--	**4.2**	--	--	--
BDC-104	BDC-104-140807	N	8/7/2014	--	--	--	--	--	**2.9**	--	0.1 U	--	--	--	**4.4**	--	--	--
BDC-104	BDC-104-141104	N	11/4/2014	--	--	--	--	--	**2.1**	--	0.1 U	--	--	--	**10.1**	--	--	--
BDC-104	BDC-104-150121	N	1/21/2015	--	--	--	--	--	**11.3**	--	0.1 U	--	--	--	**36.3**	--	--	--
BDC-104	BDC-104-150428	N	4/28/2015	--	--	--	--	--	**11.3**	--	0.1 U	--	--	--	**74.4**	--	--	--
BDC-104	BDC-104-150720	N	7/20/2015	--	--	--	--	--	**11.7**	--	0.1 U	--	--	--	**74.4**	--	--	--
BDC-104	BDC-104-151026	N	10/26/2015	--	--	--	--	--	**14.1**	--	0.1 U	--	--	--	**84.2**	--	--	--
BDC-104	BDC-104-160127	N	1/27/2016	--	--	--	--	--	**11.5**	--	0.1 U	--	--	--	**69.1**	--	--	--
BDC-104	BDC-104-160413	N	4/13/2016	--	--	--	--	--	**20.2**	--	0.1 U	--	--	--	**96.9**	--	--	--
BDC-104	BDC-104-160809	N	8/9/2016	--	--	--	--	--	**8.1**	--	0.1 U	--	--	--	**42.2**	--	--	--
BDC-104	BDC-104-161101	N	11/1/2016	--	--	--	--	--	**3.4**	--	0.1 U	--	--	--	**22.3**	--	--	--
BDC-104	BDC-104-170207	N	2/7/2017	--	--	--	--	--	**0.58**	--	0.1 U	--	--	--	**5.2**	--	--	--
BDC-104	BDC-104-170503	N	5/3/2017	--	--	--	--	--	**23.6**	--	0.1 U	--	--	--	**84.3**	--	--	--
BDC-104	BDC-104-170801	N	8/1/2017	--	--	--	--	--	**7**	--	0.1 U	--	--	--	**29.1**	--	--	--
BDC-104	BDC-104-171107	N	11/7/2017	--	--	--	--	--	**0.17**	--	0.10 U	--	--	--	**4.5**	--	--	--
BDC-104	BDC-104-180205	N	2/5/2018	--	--	--	--	--	**0.230**	--	0.100 U	--	--	--	**4.76**	--	--	--
BDC-104	BDC-104-180501	N	5/1/2018	--	--	--	--	--	**1.22**	--	0.100 U	--	--	--	**4.05**	--	--	--
BDC-104	BDC-104-180806	N	8/6/2018	--	--	--	--	--	**9.11**	--	0.100 U	--	--	--	**36.5**	--	--	--
BDC-104	BDC-104-181105	N	11/5/2018	--	--	--	--	--	**6.97 J**	--	0.100 U	--	--	--	**35.4**	--	--	--
BDC-104	BDC-104-190206	N	2/6/2019	--	--	--	--	--	**11.5**	--	**0.111**	--	--	--	**49.3**	--	--	--
BDC-104	BDC-104-190502	N	5/2/2019	--	--	--	--	--	**17.6**	--	0.100 U	--	--	--	**44.6**	--	--	--
BDC-104	BDC-104-191105	N	11/5/2019	--	--	--	--	--	**6.30**	--	0.100 U	--	--	--	**29.5**	--	--	--
GS1-15	GS1-15-020506	N	5/6/2002	--	**118**	**0**	--	--	--	--	--	--	**0.8**	**6.91**	--	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
GS2-15	GS2-15-020507	N	5/7/2002	--	**481**	**0**	--	--	--	--	--	--	**25.5**	**6.56**	--	--	--	--
GS3-15	GS3-15-020507	N	5/7/2002	--	**968**	**0**	--	--	--	--	--	--	**26**	**6.6**	--	--	--	--
ORC1-15	ORC1-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	**14.6**	**6.64**	--	--	--	--
ORC2-15	ORC2-15-020506	N	5/6/2002	--	**424**	**0.99**	--	--	--	--	--	--	**35.7**	**6.31**	--	--	--	--
ORC3-15	ORC3-15-020507	N	5/7/2002	--	**244**	**0**	--	--	--	--	--	--	**52.8**	**6.18**	--	--	--	--
ORC4-15	ORC4-15-020506	N	5/6/2002	--	**367**	**2.64**	--	--	--	--	--	--	**34.6**	**6.33**	--	--	--	--
ORC5-15	ORC5-15-020506	N	5/6/2002	--	**490**	**0**	--	--	--	--	--	--	**32.3**	**6.36**	--	--	--	--
ORC6-15	ORC6-15-020507	N	5/7/2002	--	**218**	**0**	--	--	--	--	--	--	**26.7**	**6.72**	--	--	--	--
ORC8-15	ORC8-15-020506	N	5/6/2002	--	**1450**	**3.37**	--	--	--	--	--	--	**13**	**6.69**	--	--	--	--
ORC9-15	ORC9-15-020507	N	5/7/2002	--	**243**	**0**	--	--	--	--	--	--	**16.7**	**6.96**	--	--	--	--
ORC11-15	ORC11-15-020506	N	5/6/2002	--	**275**	**0**	--	--	--	--	--	--	**9.1**	**6.78**	--	--	--	--
ORC12-15	ORC12-15-020507	N	5/7/2002	--	**212**	**0**	--	--	--	--	--	--	**32.9**	**6.88**	--	--	--	--
ORC13-15	ORC13-15-020507	N	5/7/2002	--	**0.126**	**0.98**	--	--	--	--	--	--	**48.4**	**6.36**	--	--	--	--
Museum of Flight																		
MW-5	MW-5-991121	N	11/21/1999	--	--	--	--	--	--	--	--	1000 U	--	--	--	--	--	--
SWMU-17																		
BDC-05-02	BDC-05-02-861118	N	11/18/1986	--	**510**	--	--	--	--	--	--	--	--	**5.9**	--	--	--	--
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	--	--	--	1000 U	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-081023	N	10/23/2008	--	--	--	--	--	**0.4**	--	--	--	--	--	**13**	**5.54**	--	--
BDC-05-02	BDC-05-02-081120	N	11/20/2008	--	--	--	--	--	0.1 U	--	--	--	--	--	**64.8**	**430**	--	--
BDC-05-02	BDC-05-02-081216	N	12/16/2008	--	--	--	--	--	0.1 U	0.1 U	**0.107**	--	--	--	**88.8**	**610**	--	--
BDC-05-02	BDC-05-02-090116	N	1/16/2009	--	--	--	--	--	1 U	--	--	--	--	--	**6.9**	**732**	--	--
BDC-05-02	BDC-05-02-090211	N	2/11/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	**433**	--	--
BDC-05-02	BDC-05-02-090309	N	3/9/2009	--	--	--	--	--	1 U	--	--	--	--	--	1 U	**317**	--	--
BDC-05-02	BDC-05-02-090416	N	4/16/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	0.5 U	**274**	--	--
BDC-05-02	BDC-05-02-090513	N	5/13/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	0.1 U	**215**	--	--
BDC-05-02	BDC-05-02-090816	N	8/16/2009	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	**125**	--	--
BDC-05-02	BDC-05-02-091113	N	11/13/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.3**	**44.1**	--	**49**
BDC-05-02	BDC-05-02-100216	N	2/16/2010	--	--	--	--	--	0.5 U	--	--	--	--	--	**0.5**	**86.7**	--	--
BDC-05-02	BDC-05-02-100518	N	5/18/2010	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	**20.6**	--	--
BDC-05-02	BDC-05-02-100817	N	8/17/2010	--	--	--	--	--	**0.2**	--	--	--	--	--	**1.4**	**13.3**	--	--
BDC-05-02	BDC-05-02-101109	N	11/9/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.3**	**10.8**	--	--
BDC-05-02	BDC-05-02-110215	N	2/15/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.7**	**13.2**	--	--
BDC-05-02	BDC-05-02-110502	N	5/2/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.2**	**9.76**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-02	BDC-05-02-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.2**	**8.68**	--	--
BDC-05-02	BDC-05-02-111102	N	11/2/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**1.4**	**5360**	--	--
BDC-05-02	BDC-05-02-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**673**	--	--
BDC-05-02	BDC-05-02-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**0.83 J**	**412**	--	--
BDC-05-02	BDC-05-02-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**116**	--	--
BDC-05-02	BDC-05-02-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**106**	--	--
BDC-05-02	BDC-05-02-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**32.2**	--	--
BDC-05-02	BDC-05-02-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.57 J**	**19.3**	--	--
BDC-05-02	BDC-05-02-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**15.7**	--	--
BDC-05-02	BDC-05-02-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**26.8**	--	--
BDC-05-02	BDC-05-02-DUP-131113	FD	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**26.7**	--	--
BDC-05-02	BDC-05-02-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.1**	--	--
BDC-05-02	BDC-05-02-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**5.7**	**66.5**	--	--
BDC-05-02	BDC-05-02-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	**3.6**	**93.4**	--	--
BDC-05-02	BDC-05-02-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**1.2**	**38.2**	--	--
BDC-05-02	BDC-05-02-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**8.9**	**40**	--	--
BDC-05-02	BDC-05-02-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**14.3**	**15.9**	--	--
BDC-05-02	BDC-05-02-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**12.2**	**16.4**	--	--
BDC-05-02	BDC-05-02-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	**9.5**	**15.3**	--	--
BDC-05-02	BDC-05-02-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	**0.7 J**	**3.8**	--	--
BDC-05-02	BDC-05-02-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	**23.7**	**20.9**	--	--
BDC-05-02	BDC-05-02-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**14.5**	**13.6**	--	--
BDC-05-02	BDC-05-02-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**3.8**	**14.4**	--	--
BDC-05-02	BDC-05-02-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**6**	--	--
BDC-05-02	BDC-05-02-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	**18.8**	**10.7**	--	--
BDC-05-02	BDC-05-02-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**23.2**	**15.6**	--	--
BDC-05-02	BDC-05-02-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	**18.4**	**12.3**	--	--
BDC-05-02	BDC-05-02-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**13.0**	**10.5**	--	--
BDC-05-02	BDC-05-02-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**135**	**9629**	--	--
BDC-05-02	BDC-05-02-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	1.00 U	**1723**	--	--
BDC-05-02	BDC-05-02-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	**6.21**	**1360**	--	--
BDC-05-02	BDC-05-02-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**1.52**	**1233**		
BDC-05-03	BDC-05-03-861118	N	11/18/1986	--	**310**	--	--	--	--	--	--	--	--	**5.8**	--	--	--	--
BDC-05-03	BDC-05-03-991122	N	11/22/1999	--	--	--	1000 U	--	--	--	--	--	--	--	--	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-03	BDC-05-03-081023	N	10/23/2008	--	--	--	--	--	0.1 U	--	--	--	--	--	**4.9**	**4.86**	--	--
BDC-05-03	BDC-05-03-081120	N	11/20/2008	--	--	--	--	--	**0.9**	--	--	--	--	--	**8.5**	**7.02**	--	--
BDC-05-03	BDC-05-03-081216	N	12/16/2008	--	--	--	--	--	**0.388**	**0.414**	**0.026**	--	--	--	**20.1**	**5.38**	--	--
BDC-05-03	BDC-05-03-090116	N	1/16/2009	--	--	--	--	--	**1.7**	--	--	--	--	--	**10.3**	**3.21**	--	--
BDC-05-03	BDC-05-03-090211	N	2/11/2009	--	--	--	--	--	**0.9**	--	--	--	--	--	**6.2**	**5.39**	--	--
BDC-05-03	BDC-05-03-090309	N	3/9/2009	--	--	--	--	--	**1**	--	--	--	--	--	**6.6**	**4.81**	--	--
BDC-05-03	BDC-05-03-090416	N	4/16/2009	--	--	--	--	--	**1**	--	--	--	--	--	**4.8**	**5.37**	--	--
BDC-05-03	BDC-05-03-090513	N	5/13/2009	--	--	--	--	--	**1**	--	--	--	--	--	**4.8**	**5.45**	--	--
BDC-05-03	BDC-05-03-090816	N	8/16/2009	--	--	--	--	--	**0.1**	--	--	--	--	--	**3**	**6.47**	--	--
BDC-05-03	BDC-05-03-091113	N	11/13/2009	--	--	--	--	--	**0.2**	--	--	--	--	--	**5.6**	**4.34**	--	**31.5**
BDC-05-03	BDC-05-03-100216	N	2/16/2010	--	--	--	--	--	**2.5**	--	--	--	--	--	**8.6**	**3.47**	--	--
BDC-05-03	BDC-05-03-100518	N	5/18/2010	--	--	--	--	--	**1.5**	--	--	--	--	--	**4.9**	**4.73**	--	--
BDC-05-03	BDC-05-03-100817	N	8/17/2010	--	--	--	--	--	**0.2**	--	--	--	--	--	**2.8**	**7.57**	--	--
BDC-05-03	BDC-05-03-101109	N	11/9/2010	--	--	--	--	--	**0.5**	--	--	--	--	--	**5.3**	**4.73**	--	--
BDC-05-03	BDC-05-03-110215	N	2/15/2011	--	--	--	--	--	**0.7**	--	--	--	--	--	**6.2**	**5.42**	--	--
BDC-05-03	BDC-05-03-110502	N	5/2/2011	--	--	--	--	--	**0.8**	--	--	--	--	--	**5.5**	**4.13**	--	--
BDC-05-03	BDC-05-03-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	1 U	**70**	--	--
BDC-05-03	BDC-05-03-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**10.3**	**4.9**	--	--
BDC-05-03	BDC-05-03-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	**1.2**	**8.3**	--	--
BDC-05-03	BDC-05-03-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**2.7**	**6.6**	--	--
BDC-05-03	BDC-05-03-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**10.5**	**4.3**	--	--
BDC-05-03	BDC-05-03-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**9.6**	**5.4**	--	--
BDC-05-03	BDC-05-03-DUP-140513	FD	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**9.9**	**5**	--	--
BDC-05-03	BDC-05-03-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**5.6**	**1.1**	--	--
BDC-05-03	BDC-05-03-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**4.1**	**1.7**	--	--
BDC-05-03	BDC-05-03-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	**1.2**	**6.5**	--	--
BDC-05-03	BDC-05-03-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**6.5**	**1.4**	--	--
BDC-05-03	BDC-05-03-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	**7.7**	**2.3**	--	--
BDC-05-03	BDC-05-03-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**7.2**	**2.8**	--	--
BDC-05-03	BDC-05-03-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**7.3**	--	--
BDC-05-03	BDC-05-03-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	1.00 U	**4463**	--	--
BDC-05-03	BDC-05-03-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	**0.616**	**940.8**	--	--
BDC-05-03	BDC-05-03-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**573.5**	--	--
BDC-05-03	BDC-05-03-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.361**	**432.6**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-04	BDC-05-04-991122	N	11/22/1999	--	--	--	1000 U	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-060515	N	5/15/2006	--	--	--	--	--	**12.3**	**12.3**	**0.047**	--	--	--	**33.4**	--	--	--
BDC-05-04	BDC-05-04-081023	N	10/23/2008	--	--	--	--	--	**7.6**	--	--	--	--	--	**31**	**3.8**	--	--
BDC-05-04	BDC-05-04-081120	N	11/20/2008	--	--	--	--	--	**4.5**	--	--	--	--	--	**25.2**	**5.11**	--	--
BDC-05-04	BDC-05-04-081216	N	12/16/2008	--	--	--	--	--	**5.46**	**5.49**	**0.035**	--	--	--	**30.4**	**6.94**	--	--
BDC-05-04	BDC-05-04-090116	N	1/16/2009	--	--	--	--	--	**4.3**	--	--	--	--	--	**21.8**	**5.07**	--	--
BDC-05-04	BDC-05-04-090211	N	2/11/2009	--	--	--	--	--	**5.9**	--	--	--	--	--	**31.8**	**6.76**	--	--
BDC-05-04	BDC-05-04-090309	N	3/9/2009	--	--	--	--	--	**4.8**	--	--	--	--	--	**30.1**	**5.23**	--	--
BDC-05-04	BDC-05-04-090416	N	4/16/2009	--	--	--	--	--	**5.9**	--	--	--	--	--	**33.6**	**5.69**	--	--
BDC-05-04	BDC-05-04-090513	N	5/13/2009	--	--	--	--	--	**4.5**	--	--	--	--	--	**26.6**	**5.24**	--	--
BDC-05-04	BDC-05-04-090816	N	8/16/2009	--	--	--	--	--	**5.4**	--	--	--	--	--	**30.6**	**4.99**	--	--
BDC-05-04	BDC-05-04-091113	N	11/13/2009	--	--	--	--	--	**2.2**	--	--	--	--	--	**18.4**	**4.36**	--	**22.2**
BDC-05-04	BDC-05-04-100216	N	2/16/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**24.6**	**8.86**	--	--
BDC-05-04	BDC-05-04-100518	N	5/18/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**25.4**	**7.12**	--	--
BDC-05-04	BDC-05-04-100817	N	8/17/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**17.7**	**8.72**	--	--
BDC-05-04	BDC-05-04-101109	N	11/9/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**21.3**	**7.19**	--	--
BDC-05-04	BDC-05-04-110215	N	2/15/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**19.4**	**6.88**	--	--
BDC-05-04	BDC-05-04-110502	N	5/2/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**18**	**6.78**	--	--
BDC-05-04	BDC-05-04-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	1 U	**6.64**	--	--
BDC-05-04	BDC-05-04-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**21.5**	**8.6**	--	--
BDC-05-04	BDC-05-04-120904	N	9/4/2012	--	--	--	--	--	0.10 U	--	--	--	--	--	**16.6**	--	--	--
BDC-05-04	BDC-05-04-121113	N	11/13/2012	--	--	--	--	--	0.10 U	--	--	--	--	--	**16.9**	--	--	--
BDC-05-04	BDC-05-04-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	**14.3**	**6.5**	--	--
BDC-05-04	BDC-05-04-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	**13.7**	**12.7**	--	--
BDC-05-04	BDC-05-04-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**14.4**	**8.1**	--	--
BDC-05-04	BDC-05-04-131119	N	11/19/2013	--	--	--	--	--	0.1 U	--	--	--	--	--	**13.2**	--	--	--
BDC-05-04	BDC-05-04-140506	N	5/6/2014	--	--	--	--	--	**0.4**	--	--	--	--	--	**14.4**	--	--	--
BDC-05-04	BDC-05-04-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**14.1**	**8.2**	--	--
BDC-05-04	BDC-05-04-141104	N	11/4/2014	--	--	--	--	--	0.1 U	--	--	--	--	--	1 U	--	--	--
BDC-05-04	BDC-05-04-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**6.2**	**4.8**	--	--
BDC-05-04	BDC-05-04-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**16.3**	**2.7**	--	--
BDC-05-04	BDC-05-04-150428	N	4/28/2015	--	--	--	--	--	**5**	--	--	--	--	--	**13.5**	--	--	--
BDC-05-04	BDC-05-04-151026	N	10/26/2015	--	--	--	--	--	0.1 U	--	--	--	--	--	1 U	--	--	--
BDC-05-04	BDC-05-04-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**6.1**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-04	BDC-05-04-160413	N	4/13/2016	--	--	--	--	--	**5.5**	--	--	--	--	--	**13.9**	--	--	--
BDC-05-04	BDC-05-04-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	**12.2**	**2.4**	--	--
BDC-05-04	BDC-05-04-161102	N	11/2/2016	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.75 J**	**7.4**	--	--
BDC-05-04	BDC-05-04-170503	N	5/3/2017	--	--	--	--	--	**8.8 J**	--	0.1 U	--	--	--	**12**	**3.3**	--	--
BDC-05-04	BDC-05-04-171106	N	11/6/2017	--	--	--	--	--	0.050 U	--	--	--	--	--	**2.7**	**9.2**	--	--
BDC-05-04	BDC-05-04-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	1.00 U	**1246**	--	--
BDC-05-04	BDC-05-04-181107	N	11/7/2018	--	--	--	--	--	0.100 UJ	--	0.100 UJ	--	--	--	**0.842**	**119.3**	--	--
BDC-05-04	BDC-05-04-190503	N	5/3/2019	--	--	--	--	--	0.100 U	--	0.100 U	--	--	--	**8.21**	**101.0**	--	--
BDC-05-04	BDC-05-04-191106	N	11/6/2019	--	--	--	--	--	0.100 U	--	0.100 U	--	--	--	**4.68**	**48.80**	--	--
BDC-05-05	BDC-05-05-991122	N	11/22/1999	--	--	--	1000 U	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-031119	N	11/19/2003	--	--	--	--	--	**1.1**	**1.1**	0.01 U	--	--	--	**14**	--	--	--
BDC-05-05	BDC-05-05-091113	N	11/13/2009	--	--	--	--	--	**1.2**	--	--	--	--	--	**8.7**	--	--	**4.9**
BDC-05-05	BDC-05-05-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	**7.5**	**1.74**	--	--
BDC-05-05	BDC-05-05-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**22.1**	**1.1**	--	--
BDC-05-05	BDC-05-05-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	**20.6**	1 U	--	--
BDC-05-05	BDC-05-05-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	**11.7**	**1.5**	--	--
BDC-05-05	BDC-05-05-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	**21.8**	1 U	--	--
BDC-05-05	BDC-05-05-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**18.6**	**3.6**	--	--
BDC-05-05	BDC-05-05-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**12.5**	1 U	--	--
BDC-05-05	BDC-05-05-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**16.1**	1 U	--	--
BDC-05-05	BDC-05-05-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	**13.2**	1 U	--	--
BDC-05-05	BDC-05-05-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	**13.4**	1 U	--	--
BDC-05-05	BDC-05-05-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	**35.7**	**3.2**	--	--
BDC-05-05	BDC-05-05-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	**21.3**	**1.9**	--	--
BDC-05-05	BDC-05-05-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**39.0**	**2.7**	--	--
BDC-05-05	BDC-05-05-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**24.6**	**1.92**	--	--
BDC-05-05	BDC-05-05-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	**37.5**	**2.38**	--	--
BDC-05-05	BDC-05-05-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	**36.3**	**1.85**	--	--
BDC-05-05	BDC-05-05-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	**33.6**	**2.52**	--	--
BDC-05-07	BDC-05-07-991122	N	11/22/1999	--	--	--	1000 U	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-081023	N	10/23/2008	--	--	--	--	--	**9.6**	--	--	--	--	--	**33.4**	**7.81**	--	--
BDC-05-07	BDC-05-07-081120	N	11/20/2008	--	--	--	--	--	**2.2**	--	--	--	--	--	**15.8**	**4.59**	--	--
BDC-05-07	BDC-05-07-081216	N	12/16/2008	--	--	--	--	--	**4.76**	**4.79**	**0.03**	--	--	--	**29.4**	**6.08**	--	--
BDC-05-07	BDC-05-07-090116	N	1/16/2009	--	--	--	--	--	**8.4**	--	--	--	--	--	**32.6**	**6.26**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-07	BDC-05-07-090211	N	2/11/2009	--	--	--	--	--	**11.2 J**	--	--	--	--	--	**37.5**	**9.34**	--	--
BDC-05-07	BDC-05-07-090309	N	3/9/2009	--	--	--	--	--	**8.8**	--	--	--	--	--	**35.3**	**6.77**	--	--
BDC-05-07	BDC-05-07-090416	N	4/16/2009	--	--	--	--	--	**8.2**	--	--	--	--	--	**31.2**	**8.14**	--	--
BDC-05-07	BDC-05-07-090513	N	5/13/2009	--	--	--	--	--	**6.8**	--	--	--	--	--	**27.2**	**7.32**	--	--
BDC-05-07	BDC-05-07-090816	N	8/16/2009	--	--	--	--	--	**2.3**	--	--	--	--	--	**23.2**	**8.2**	--	--
BDC-05-07	BDC-05-07-091113	N	11/13/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	**5.7**	**9.12**	--	**51.3**
BDC-05-07	BDC-05-07-100216	N	2/16/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**20.4**	**14.7**	--	--
BDC-05-07	BDC-05-07-100518	N	5/18/2010	--	--	--	--	--	0.5 U	--	--	--	--	--	**16.4**	**14.8**	--	--
BDC-05-07	BDC-05-07-100817	N	8/17/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**8.6**	**18.8**	--	--
BDC-05-07	BDC-05-07-101109	N	11/9/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**15.2**	**15.2**	--	--
BDC-05-07	BDC-05-07-110215	N	2/15/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**11.8**	**14**	--	--
BDC-05-07	BDC-05-07-110502	N	5/2/2011	--	--	--	--	--	**0.1**	--	--	--	--	--	**15.6**	**16.8**	--	--
BDC-05-07	BDC-05-07-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	1 U	**1780**	--	--
BDC-05-07	BDC-05-07-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**0.41 J**	**48.5**	--	--
BDC-05-07	BDC-05-07-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**26**	--	--
BDC-05-07	BDC-05-07-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.45 J**	**10.5**	--	--
BDC-05-07	BDC-05-07-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.8**	--	--
BDC-05-07	BDC-05-07-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**1.8**	**9.1**	--	--
BDC-05-07	BDC-05-07-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**0.72 J**	**17.7**	--	--
BDC-05-07	BDC-05-07-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**5.5**	--	--
BDC-05-07	BDC-05-07-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	**0.41 J**	**5.4**	--	--
BDC-05-07	BDC-05-07-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**2**	**3.8**	--	--
BDC-05-07	BDC-05-07-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**5.5**	--	--
BDC-05-07	BDC-05-07-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**3.3**	**3.6**	--	--
BDC-05-07	BDC-05-07-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**1.5**	**33.3**	--	--
BDC-05-07	BDC-05-07-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**626.6**	--	--
BDC-05-07	BDC-05-07-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	**0.335**	**207.7**	--	--
BDC-05-07	BDC-05-07-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	**0.261**	**158.6**	--	--
BDC-05-07	BDC-05-07-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.657**	**94.54**	--	--
BDC-05-08	BDC-05-08-081023	N	10/23/2008	--	--	--	--	--	**0.3**	--	--	--	--	--	**8.9**	**5.07**	--	--
BDC-05-08	BDC-05-08-081120	N	11/20/2008	--	--	--	--	--	**0.7**	--	--	--	--	--	**7.2**	**5.85**	--	--
BDC-05-08	BDC-05-08-081216	N	12/16/2008	--	--	--	--	--	**0.907**	**0.966**	**0.059**	--	--	--	**21.8**	**5.38**	--	--
BDC-05-08	BDC-05-08-090116	N	1/16/2009	--	--	--	--	--	**1.7**	--	--	--	--	--	**7**	**5.77**	--	--
BDC-05-08	BDC-05-08-090211	N	2/11/2009	--	--	--	--	--	**0.3**	--	--	--	--	--	**4.7**	**7.01**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-08	BDC-05-08-090309	N	3/9/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	**3.8**	**6.7**	--	--
BDC-05-08	BDC-05-08-090416	N	4/16/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	**1.7**	**6.83**	--	--
BDC-05-08	BDC-05-08-090513	N	5/13/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.8**	**6.03**	--	--
BDC-05-08	BDC-05-08-090816	N	8/16/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	**5.3**	**6.14**	--	--
BDC-05-08	BDC-05-08-091113	N	11/13/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	**3.3**	**8.41**	--	**120**
BDC-05-08	BDC-05-08-100216	N	2/16/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.8**	**8.25**	--	--
BDC-05-08	BDC-05-08-100518	N	5/18/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.8**	**7.3**	--	--
BDC-05-08	BDC-05-08-100817	N	8/17/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.5**	**7.16**	--	--
BDC-05-08	BDC-05-08-101109	N	11/9/2010	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.3**	**7.59**	--	--
BDC-05-08	BDC-05-08-110215	N	2/15/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.3**	**8.72**	--	--
BDC-05-08	BDC-05-08-110502	N	5/2/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.7**	**7.99**	--	--
BDC-05-08	BDC-05-08-111102	N	11/2/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.8**	**7.27**	--	--
BDC-05-08	BDC-05-08-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.42 J**	**12.4**	--	--
BDC-05-08	BDC-05-08-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.1**	--	--
BDC-05-08	BDC-05-08-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**5.7**	--	--
BDC-05-08	BDC-05-08-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**15**	--	--
BDC-05-08	BDC-05-08-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**0.31 J**	**9.5**	--	--
BDC-05-08	BDC-05-08-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**0.65 J**	**21.6**	--	--
BDC-05-08	BDC-05-08-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9.4**	--	--
BDC-05-08	BDC-05-08-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.8**	--	--
BDC-05-08	BDC-05-08-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**3.8**	--	--
BDC-05-08	BDC-05-08-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**4.7**	--	--
BDC-05-08	BDC-05-08-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**0.41 J**	**5.7**	--	--
BDC-05-08	BDC-05-08-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**0.90 J**	**5.1**	--	--
BDC-05-08	BDC-05-08-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.137**	**5.97**	--	--
BDC-05-08	BDC-05-08-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**8.35**	--	--
BDC-05-08	BDC-05-08-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.211**	**5.29**	--	--
BDC-05-08	BDC-05-08-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.495**	**9.31**	--	--
BDC-05-09	BDC-05-09-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**12.1**	**5.5**	--	--
BDC-05-09	BDC-05-09-111102	N	11/2/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**7.6**	**4360**	--	--
BDC-05-09	BDC-05-09-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**0.49 J**	**531**	--	--
BDC-05-09	BDC-05-09-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**266**	--	--
BDC-05-09	BDC-05-09-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**40.6**	--	--
BDC-05-09	BDC-05-09-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**0.94 J**	**36.8**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-09	BDC-05-09-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**1.9**	**13.1**	--	--
BDC-05-09	BDC-05-09-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**0.72 J**	**6.9**	--	--
BDC-05-09	BDC-05-09-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**0.68 J**	**4**	--	--
BDC-05-09	BDC-05-09-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**2.5**	--	--
BDC-05-09	BDC-05-09-DUP-151028	FD	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**2.5**	--	--
BDC-05-09	BDC-05-09-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**2.8**	--	--
BDC-05-09	BDC-05-09-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	**2.8**	**5.2**	--	--
BDC-05-09	BDC-05-09-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**4.3**	**4.3**	--	--
BDC-05-09	BDC-05-09-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**0.65 J**	**3.6**	--	--
BDC-05-09	BDC-05-09-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.195**	**38.83**	--	--
BDC-05-09	BDC-05-09-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**39.03**	--	--
BDC-05-09	BDC-05-09-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**7.19**	**26.23**	--	--
BDC-05-09	BDC-05-09-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**2.59**	**30.69**	--	--
BDC-05-10	BDC-05-10-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**19.7**	**4.54**	--	--
BDC-05-10	BDC-05-10-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	**10.9**	**2030**	--	--
BDC-05-10	BDC-05-10-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.43 J**	**270**	--	--
BDC-05-10	BDC-05-10-DUP-120506	FD	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.44 J**	**261**	--	--
BDC-05-10	BDC-05-10-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**122**	--	--
BDC-05-10	BDC-05-10-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.49 J**	**50.8**	--	--
BDC-05-10	BDC-05-10-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**54.1**	--	--
BDC-05-10	BDC-05-10-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**27.6**	--	--
BDC-05-10	BDC-05-10-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**19.3**	--	--
BDC-05-10	BDC-05-10-DUP-141110	FD	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**19.8**	--	--
BDC-05-10	BDC-05-10-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**10.3**	--	--
BDC-05-10	BDC-05-10-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.8 J**	--	--
BDC-05-10	BDC-05-10-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**0.65 J**	**5**	--	--
BDC-05-10	BDC-05-10-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.5**	--	--
BDC-05-10	BDC-05-10-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**1.7**	**6**	--	--
BDC-05-10	BDC-05-10-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**5.3**	--	--
BDC-05-10	BDC-05-10-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	1.00 U	**1453**	--	--
BDC-05-10	BDC-05-10-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**303.1**	--	--
BDC-05-10	BDC-05-10-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**1.85**	**105.1**	--	--
BDC-05-10	BDC-05-10-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.403**	**53.47**	--	--
BDC-05-11	BDC-05-11-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**4**	**3.87**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-11	BDC-05-11-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	1 U	**1330**	--	--
BDC-05-11	BDC-05-11-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.5 J**	**284**	--	--
BDC-05-11	BDC-05-11-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**73.8**	--	--
BDC-05-11	BDC-05-11-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.43 J**	**42.1**	--	--
BDC-05-11	BDC-05-11-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**0.36 J**	**48.4**	--	--
BDC-05-11	BDC-05-11-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**38.1**	--	--
BDC-05-11	BDC-05-11-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**11.1**	--	--
BDC-05-11	BDC-05-11-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**0.81 J**	**7.6**	--	--
BDC-05-11	BDC-05-11-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.4**	--	--
BDC-05-11	BDC-05-11-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**6.5**	--	--
BDC-05-11	BDC-05-11-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9**	--	--
BDC-05-11	BDC-05-11-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9.2**	--	--
BDC-05-11	BDC-05-11-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**7.4**	--	--
BDC-05-11	BDC-05-11-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.107**	**40.80**	--	--
BDC-05-11	BDC-05-11-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**43.44**	--	--
BDC-05-11	BDC-05-11-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.652**	**22.88**	--	--
BDC-05-11	BDC-05-11-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.226**	**13.05**	--	--
BDC-05-12	BDC-05-12-110731	N	7/31/2011	--	--	--	--	--	**0.1**	--	--	--	--	--	**8.4**	**6.95**	--	--
BDC-05-12	BDC-05-12-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	**5.6**	**2960**	--	--
BDC-05-12	BDC-05-12-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**279**	--	--
BDC-05-12	BDC-05-12-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.77 J**	**83.2**	--	--
BDC-05-12	BDC-05-12-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**50.4**	--	--
BDC-05-12	BDC-05-12-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**52.9**	--	--
BDC-05-12	BDC-05-12-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**27.5**	--	--
BDC-05-12	BDC-05-12-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**35.4**	--	--
BDC-05-12	BDC-05-12-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**32.6**	--	--
BDC-05-12	BDC-05-12-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**0.39 J**	**26.9**	--	--
BDC-05-12	BDC-05-12-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	**0.37 J**	**19.7**	--	--
BDC-05-12	BDC-05-12-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**0.49 J**	**21.5**	--	--
BDC-05-12	BDC-05-12-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**43.1**	--	--
BDC-05-12	BDC-05-12-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**30.3**	--	--
BDC-05-12	BDC-05-12-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**0.45 J**	**22.6**	--	--
BDC-05-12	BDC-05-12-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**13.2**	--	--
BDC-05-12	BDC-05-12-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**15.2**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-12	BDC-05-12-DUP-150721	FD	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**14.6**	--	--
BDC-05-12	BDC-05-12-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**29**	--	--
BDC-05-12	BDC-05-12-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**32.7**	--	--
BDC-05-12	BDC-05-12-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**14.3**	--	--
BDC-05-12	BDC-05-12-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**9.4**	--	--
BDC-05-12	BDC-05-12-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**10.6**	--	--
BDC-05-12	BDC-05-12-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.6**	--	--
BDC-05-12	BDC-05-12-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.1**	--	--
BDC-05-12	BDC-05-12-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**7.6**	--	--
BDC-05-12	BDC-05-12-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**7.0**	--	--
BDC-05-12	BDC-DUP3-180502	FD	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.105**	**18.23**	--	--
BDC-05-12	BDC-05-12-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.104**	**19.37**	--	--
BDC-05-12	BDC-DUP3-181106	FD	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**23.76**	--	--
BDC-05-12	BDC-05-12-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**23.33**	--	--
BDC-05-12	BDC-05-12-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.107**	**17.66**	--	--
BDC-05-12	BDC-DUP3-190502	FD	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.135**	**16.52**	--	--
BDC-05-12	BDC-05-12-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.726 J**	**13.49**	--	--
BDC-05-12	BDC-DUP3-191106	FD	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.350 J**	**12.94**	--	--
BDC-05-13	BDC-05-13-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**2.3**	**5.96**	--	--
BDC-05-13	BDC-05-13-111101	N	11/1/2011	--	--	--	--	--	1 U	--	--	--	--	--	1 U	**550**	--	--
BDC-05-13	BDC-05-13-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.43 J**	**34.2**	--	--
BDC-05-13	BDC-05-13-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**30.2**	--	--
BDC-05-13	BDC-05-13-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.43 J**	**21.4**	--	--
BDC-05-13	BDC-05-13-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**0.31 J**	**24.7**	--	--
BDC-05-13	BDC-05-13-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**23.4**	--	--
BDC-05-13	BDC-05-13-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**0.33 J**	**15.1**	--	--
BDC-05-13	BDC-05-13-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.9**	--	--
BDC-05-13	BDC-05-13-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**10.8**	--	--
BDC-05-13	BDC-05-13-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.6**	--	--
BDC-05-13	BDC-05-13-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**12.2**	--	--
BDC-05-13	BDC-05-13-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**11.6**	--	--
BDC-05-13	BDC-05-13-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**18.5**	--	--
BDC-05-13	BDC-05-13-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.112**	**21.48**	--	--
BDC-05-13	BDC-05-13-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**20.12**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-13	BDC-05-13-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.254**	**23.23**	--	--
BDC-05-13	BDC-05-13-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.122**	**19.70**	--	--
BDC-05-14	BDC-05-14-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**10.1**	**8.55**	--	--
BDC-05-14	BDC-05-14-111101	N	11/1/2011	--	--	--	--	--	1 U	--	--	--	--	--	1 U	**725**	--	--
BDC-05-14	BDC-05-14-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.62 J**	**41.5**	--	--
BDC-05-14	BDC-05-14-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**39.9**	--	--
BDC-05-14	BDC-05-14-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**26.3**	--	--
BDC-05-14	BDC-05-14-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**29.5**	--	--
BDC-05-14	BDC-05-14-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**30.2**	--	--
BDC-05-14	BDC-05-14-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**2.3**	**21.3**	--	--
BDC-05-14	BDC-05-14-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**1.8**	**18.9**	--	--
BDC-05-14	BDC-05-14-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	**0.46 J**	**21**	--	--
BDC-05-14	BDC-05-14-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**3.1**	**22.3**	--	--
BDC-05-14	BDC-05-14-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**16**	--	--
BDC-05-14	BDC-05-14-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**3.8**	**21.8**	--	--
BDC-05-14	BDC-05-14-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**3.8**	**19.2**	--	--
BDC-05-14	BDC-05-14-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**10.4**	**20.57**	--	--
BDC-05-14	BDC-05-14-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	**9.23**	**22.28**	--	--
BDC-05-14	BDC-05-14-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**2.82**	**18.43**	--	--
BDC-05-14	BDC-05-14-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	**3.30**	**19.80**	--	--
BDC-05-15	BDC-05-15-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**18.6**	**10.3**	--	--
BDC-05-15	BDC-05-15-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	**11.3**	**4420**	--	--
BDC-05-15	BDC-05-15-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**423**	--	--
BDC-05-15	BDC-05-15-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**71.2**	--	--
BDC-05-15	BDC-05-15-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.32 J**	**42.9**	--	--
BDC-05-15	BDC-05-15-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**45.5**	--	--
BDC-05-15	BDC-05-15-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**37.5**	--	--
BDC-05-15	BDC-05-15-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**37.5**	--	--
BDC-05-15	BDC-05-15-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**25.6**	--	--
BDC-05-15	BDC-05-15-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**22.2 J**	--	--
BDC-05-15	BDC-05-15-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**27.6**	--	--
BDC-05-15	BDC-05-15-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**22.5**	--	--
BDC-05-15	BDC-05-15-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**0.41 J**	**23.9**	--	--
BDC-05-15	BDC-05-15-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**25.1**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-15	BDC-05-15-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.108**	**19.57**	--	--
BDC-05-15	BDC-05-15-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**15.31**	--	--
BDC-05-15	BDC-05-15-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	**0.164**	**23.15**	--	--
BDC-05-15	BDC-05-15-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.269**	**24.89**	--	--
BDC-05-16	BDC-05-16-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**8.9**	**7.78**	--	--
BDC-05-16	BDC-05-16-111101	N	11/1/2011	--	--	--	--	--	1 U	--	--	--	--	--	**2.8**	**2250**	--	--
BDC-05-16	BDC-05-16-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**1270**	--	--
BDC-05-16	BDC-05-16-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**207**	--	--
BDC-05-16	BDC-05-16-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**40.6**	--	--
BDC-05-16	BDC-05-16-DUP-120905	FD	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**39.1**	--	--
BDC-05-16	BDC-05-16-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**32.3**	--	--
BDC-05-16	BDC-05-16-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**34.6**	--	--
BDC-05-16	BDC-05-16-DUP-130225	FD	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**35.1**	--	--
BDC-05-16	BDC-05-16-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.38 J**	**33.1**	--	--
BDC-05-16	BDC-05-16-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**31.6**	--	--
BDC-05-16	BDC-05-16-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**36**	--	--
BDC-05-16	BDC-05-16-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**28.9**	--	--
BDC-05-16	BDC-0516-DUP-140211	FD	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**28.3**	--	--
BDC-05-16	BDC-05-16-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**28.7**	--	--
BDC-05-16	BDC-05-16-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**27.8**	--	--
BDC-05-16	BDC-05-16-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**0.82 J**	**38.7**	--	--
BDC-05-16	BDC-05-16-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**0.7 J**	**33.6**	--	--
BDC-05-16	BDC-05-16-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**23.8**	--	--
BDC-05-16	BDC-05-16-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**28.9**	--	--
BDC-05-16	BDC-05-16-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**28.9**	--	--
BDC-05-16	BDC-05-16-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**23.7**	--	--
BDC-05-16	BDC-05-16-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**17.7**	--	--
BDC-05-16	BDC-05-16-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**16.9**	--	--
BDC-05-16	BDC-05-16-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**13**	--	--
BDC-05-16	BDC-05-16-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**17.7**	--	--
BDC-05-16	BDC-05-16-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**17**	--	--
BDC-05-16	BDC-05-16-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**12.7**	--	--
BDC-05-16	BDC-05-16-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**11.6**	--	--
BDC-05-16	BDC-05-16-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**13.06**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-16	BDC-05-16-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**14.17**	--	--
BDC-05-16	BDC-05-16-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.103**	**16.15**	--	--
BDC-05-16	BDC-05-16-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.285**	**20.08**	--	--
BDC-05-17	BDC-05-17-110731	N	7/31/2011	--	--	--	--	--	**0.6**	--	--	--	--	--	**16**	**10.2**	--	--
BDC-05-17	BDC-05-17-111101	N	11/1/2011	--	--	--	--	--	1 U	--	--	--	--	--	**23.9**	**3500**	--	--
BDC-05-17	BDC-05-17-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.69 J**	**839**	--	--
BDC-05-17	BDC-05-17-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**73.5**	--	--
BDC-05-17	BDC-05-17-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**45.8**	--	--
BDC-05-17	BDC-05-17-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**49.8**	--	--
BDC-05-17	BDC-05-17-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**44.1**	--	--
BDC-05-17	BDC-05-17-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**0.74 J**	**52**	--	--
BDC-05-17	BDC-05-17-DUP-141111	FD	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	**0.77 J**	**50.6**	--	--
BDC-05-17	BDC-05-17-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**29**	--	--
BDC-05-17	BDC-05-17-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**32**	--	--
BDC-05-17	BDC-05-17-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**29**	--	--
BDC-05-17	BDC-05-17-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**19.9**	--	--
BDC-05-17	BDC-05-17-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**19.2**	--	--
BDC-05-17	BDC-05-17-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**15.8**	--	--
BDC-05-17	BDC-05-17-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**14.86**	--	--
BDC-05-17	BDC-05-17-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**11.21**	--	--
BDC-05-17	BDC-05-17-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.986**	**17.81**	--	--
BDC-05-17	BDC-05-17-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.213**	**20.00**	--	--
BDC-05-18	BDC-05-18-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**4.5**	**3.21**	--	--
BDC-05-18	BDC-05-18-111102	N	11/2/2011	--	--	--	--	--	1 U	--	--	--	--	--	**1.2**	**21.7**	--	--
BDC-05-18	BDC-05-18-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**2.7**	--	--
BDC-05-18	BDC-05-18-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**2.1**	**2.5**	--	--
BDC-05-18	BDC-05-18-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	**2**	**1.8**	--	--
BDC-05-18	BDC-05-18-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	**2.4**	**1.7**	--	--
BDC-05-18	BDC-05-18-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	**9.2**	**2**	--	--
BDC-05-18	BDC-05-18-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	**7**	**1.3**	--	--
BDC-05-18	BDC-05-18-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	**4.1**	**2.2**	--	--
BDC-05-18	BDC-05-18-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	**4.7**	1 U	--	--
BDC-05-18	BDC-05-18-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	**3.2**	**1.4**	--	--
BDC-05-18	BDC-05-18-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**6.7**	**2.6**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-18	BDC-05-18-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	**2.9**	**1.4**	--	--
BDC-05-18	BDC-05-18-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**3**	1 U	--	--
BDC-05-18	BDC-05-18-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**2**	**1.2**	--	--
BDC-05-18	BDC-05-18-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	**3.6**	**4.1**	--	--
BDC-05-18	BDC-05-18-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	**2.8**	1 U	--	--
BDC-05-18	BDC-05-18-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	**3.1**	1 U	--	--
BDC-05-18	BDC-05-18-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	**5.4**	**1.8**	--	--
BDC-05-18	BDC-05-18-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**8.5**	1 U	--	--
BDC-05-18	BDC-05-18-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**2.5**	**2.5**	--	--
BDC-05-18	BDC-05-18-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	**2.6**	**2**	--	--
BDC-05-18	BDC-05-18-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	**5.3**	**1.8**	--	--
BDC-05-18	BDC-05-18-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	**8.1**	**1.7**	--	--
BDC-05-18	BDC-05-18-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	**5.2**	**18.3**	--	--
BDC-05-18	BDC-05-18-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**3.9**	--	--
BDC-05-18	BDC-05-18-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.823**	**27.88**	--	--
BDC-05-18	BDC-05-18-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	**3.22**	**2.67**	--	--
BDC-05-18	BDC-05-18-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**7.20**	**1.94**	--	--
BDC-05-18	BDC-05-18-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**9.24**	**2.59**	--	--
BDC-05-19	BDC-05-19-110731	N	7/31/2011	--	--	--	--	--	**0.2**	--	--	--	--	--	**5.2**	**7.31**	--	--
BDC-05-19	BDC-05-19-111101	N	11/1/2011	--	--	--	--	--	1 U	--	--	--	--	--	**2.5**	**170**	--	--
BDC-05-19	BDC-05-19-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**296**	--	--
BDC-05-19	BDC-05-19-DUP-120219	FD	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**283**	--	--
BDC-05-19	BDC-05-19-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**1.4**	**244**	--	--
BDC-05-19	BDC-05-19-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	**1.4**	**68**	--	--
BDC-05-19	BDC-05-19-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	**1.8**	**68.1**	--	--
BDC-05-19	BDC-05-19-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**53**	--	--
BDC-05-19	BDC-05-19-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.85 J**	**52.4**	--	--
BDC-05-19	BDC-05-19-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	**0.52 J**	**60.6**	--	--
BDC-05-19	BDC-05-19-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**0.52 J**	**57.7**	--	--
BDC-05-19	BDC-05-19-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	**0.39 J**	**64.8**	--	--
BDC-05-19	BDC-05-19-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**0.37 J**	**54.9**	--	--
BDC-05-19	BDC-05-19-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**57.8**	--	--
BDC-05-19	BDC-05-19-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**0.31 J**	**40.1**	--	--
BDC-05-19	BDC-05-19-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**0.55 J**	**31.4**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-19	BDC-05-19-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**20.1**	--	--
BDC-05-19	BDC-05-19-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**20.3**	--	--
BDC-05-19	BDC-05-19-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**28.8**	--	--
BDC-05-19	BDC-05-19-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**25.9**	--	--
BDC-05-19	BDC-05-19-DUP-160126	FD	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**25.9**	--	--
BDC-05-19	BDC-05-19-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**0.36 J**	**21.3**	--	--
BDC-05-19	BDC-05-19-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**0.60 J**	**12.2**	--	--
BDC-05-19	BDC-05-DUP2-160809	FD	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**0.66 J**	**13.2**	--	--
BDC-05-19	BDC-05-19-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	**0.3 J**	**12.9**	--	--
BDC-05-19	BDC-05-19-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	**0.32 J**	**12.1**	--	--
BDC-05-19	BDC-05-DUP-170208	FD	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	**0.33 J**	**12.2**	--	--
BDC-05-19	BDC-05-19-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**0.43 J**	**11.6**	--	--
BDC-05-19	BDC-05-19-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**10.2**	--	--
BDC-05-19	BDC-DUP2-170801	FD	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**10.1**	--	--
BDC-05-19	BDC-05-19-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	**0.45 J**	**9.3**	--	--
BDC-05-19	BDC-05-19-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**0.124**	**22.62**	--	--
BDC-05-19	BDC-05-19-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	**0.255**	**15.89**	--	--
BDC-05-19	BDC-05-19-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.232**	**15.61**	--	--
BDC-05-19	BDC-05-19-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	**0.496**	**16.51**	--	--
BDC-05-2,3,4,7,8	BDC-005-2,3,4,7,8-081023	N	10/23/2008	--	--	--	--	**7600**	--	--	--	--	--	**6.28**	--	--	**0.8**	--
BDC-05-20	BDC-05-20-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**7.4**	**10.8**	--	--
BDC-05-20	BDC-05-20-111103	N	11/3/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**6.0**	**8.25**	--	--
BDC-05-20	BDC-05-20-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**8.2**	--	--
BDC-05-20	BDC-05-20-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**2.3**	**11.1**	--	--
BDC-05-20	BDC-05-20-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**12.1**	--	--
BDC-05-20	BDC-05-20-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**13.1**	--	--
BDC-05-20	BDC-05-20-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**16.3**	--	--
BDC-05-20	BDC-05-20-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**16.9**	--	--
BDC-05-20	BDC-05-20-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**15.4**	--	--
BDC-05-20	BDC-05-20-DUP-130828	FD	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**15.7**	--	--
BDC-05-20	BDC-05-20-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**17.9**	--	--
BDC-05-20	BDC-05-20-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**16.3**	--	--
BDC-05-20	BDC-05-20-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**0.36 J**	**18.7**	--	--
BDC-05-20	BDC-05-20-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**17.6**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-20	BDC-05-20-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**0.97 J**	**15.9**	--	--
BDC-05-20	BDC-05-20-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**0.59 J**	**13.8**	--	--
BDC-05-20	BDC-05-20-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**11.4**	--	--
BDC-05-20	BDC-05-20-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**14.2**	--	--
BDC-05-20	BDC-05-20-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**10.6**	--	--
BDC-05-20	BDC-05-20-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9.9**	--	--
BDC-05-20	BDC-05-20-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**16.2**	--	--
BDC-05-20	BDC-05-20-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**0.37 J**	**12.9**	--	--
BDC-05-20	BDC-05-20-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**14.1**	--	--
BDC-05-20	BDC-05-20-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**13**	--	--
BDC-05-20	BDC-05-20-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**1.2**	**12.9**	--	--
BDC-05-20	BDC-05-20-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**12.3**	--	--
BDC-05-20	BDC-05-20-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**7.9**	--	--
BDC-05-20	BDC-DUP3-171107	FD	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**8.2**	--	--
BDC-05-20	BDC-05-20-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**12.18**	--	--
BDC-05-20	BDC-05-20-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**9.14**	--	--
BDC-05-20	BDC-05-20-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**11.96**	--	--
BDC-05-20	BDC-05-20-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**0.196**	**12.30**	--	--
BDC-05-21	BDC-05-21-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.2**	**6.42**	--	--
BDC-05-21	BDC-05-21-111103	N	11/3/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**6.3**	**5.23**	--	--
BDC-05-21	BDC-05-21-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**7.2**	--	--
BDC-05-21	BDC-05-21-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**1.9**	**12.3**	--	--
BDC-05-21	BDC-05-21-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	**1.4**	**9.5**	--	--
BDC-05-21	BDC-05-21-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	**0.62 J**	**8.9**	--	--
BDC-05-21	BDC-05-21-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**8.7**	--	--
BDC-05-21	BDC-05-21-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.2**	--	--
BDC-05-21	BDC-05-21-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.9**	--	--
BDC-05-21	BDC-05-21-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.7**	--	--
BDC-05-21	BDC-05-21-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**8.3**	--	--
BDC-05-21	BDC-05-21-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**0.6 J**	**8.6 J**	--	--
BDC-05-21	BDC-05-21-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9.4**	--	--
BDC-05-21	BDC-05-21-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**0.99 J**	**5.7**	--	--
BDC-05-21	BDC-05-21-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**0.97 J**	**6.3**	--	--
BDC-05-21	BDC-05-21-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**1.9**	**5.4**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-21	BDC-05-21-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	**0.55 J**	**4.5**	--	--
BDC-05-21	BDC-05-21-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	**0.49 J**	**5.7**	--	--
BDC-05-21	BDC-05-21-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	**1.4**	**13.8**	--	--
BDC-05-21	BDC-05-21-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	**1.1**	**12.7**	--	--
BDC-05-21	BDC-05-DUP2-160421	FD	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	**1**	**13.3**	--	--
BDC-05-21	BDC-05-21-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**6.7**	--	--
BDC-05-21	BDC-05-21-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9.5**	--	--
BDC-05-21	BDC-DUP3-161102	FD	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9.6**	--	--
BDC-05-21	BDC-05-21-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9.3**	--	--
BDC-05-21	BDC-05-21-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	**0.64 J**	**9.1**	--	--
BDC-05-21	BDC-DUP3-170503	FD	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	**0.65 J**	**9.2**	--	--
BDC-05-21	BDC-05-21-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	**1.1**	**13.9**	--	--
BDC-05-21	BDC-05-21-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**13.2**	--	--
BDC-05-21	BDC-05-21-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**7.32**	**4.95**	--	--
BDC-05-21	BDC-05-21-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	**0.490**	**5.89**	--	--
BDC-05-21	BDC-05-21-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**2.19**	**4.62**	--	--
BDC-05-21	BDC-05-21-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**1.97**	**6.95**	--	--
BDC-05-22	BDC-05-22-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**14**	**7.94**	--	--
BDC-05-22	BDC-05-22-111103	N	11/3/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**18.1**	**6.14**	--	--
BDC-05-22	BDC-05-22-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	**17**	**6.2**	--	--
BDC-05-22	BDC-05-22-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**19.4**	**8.4**	--	--
BDC-05-22	BDC-05-22-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	**14.7**	**7.6**	--	--
BDC-05-22	BDC-05-22-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	**17.8**	**7.7**	--	--
BDC-05-22	BDC-05-22-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	**10.1**	**7.5**	--	--
BDC-05-22	BDC-05-22-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	**6.3**	**8.7**	--	--
BDC-05-22	BDC-05-22-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	**3.5**	**8.9**	--	--
BDC-05-22	BDC-05-22-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	**5.9**	**8.8**	--	--
BDC-05-22	BDC-05-22-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	**4.9**	**7.3**	--	--
BDC-05-22	BDC-05-22-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**8.7**	**8.4**	--	--
BDC-05-22	BDC-05-22-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	**10.9**	**9.6**	--	--
BDC-05-22	BDC-05-22-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**19.2**	**6.8**	--	--
BDC-05-22	BDC-05-22-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**1.2**	**7.3**	--	--
BDC-05-22	BDC-05-22-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**5.2**	--	--
BDC-05-22	BDC-05-22-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	**4.4**	**6.1**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-22	BDC-05-22-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	**4.2**	**6.9**	--	--
BDC-05-22	BDC-05-22-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	**8.5**	**6.8**	--	--
BDC-05-22	BDC-05-22-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	**22.4**	**6**	--	--
BDC-05-22	BDC-05-22-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**6.6**	**6.2**	--	--
BDC-05-22	BDC-05-22-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	**0.57 J**	**5.7**	--	--
BDC-05-22	BDC-05-22-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	**0.34 J**	**5.9**	--	--
BDC-05-22	BDC-05-22-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**6.6**	**6**	--	--
BDC-05-22	BDC-05-22-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	**1.8**	**6.3**	--	--
BDC-05-22	BDC-05-22-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**5.9**	--	--
BDC-05-22	BDC-05-22-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**10.9**	**5.66**	--	--
BDC-05-22	BDC-05-22-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	**2.12**	**5.39**	--	--
BDC-05-22	BDC-05-22-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**2.43**	**9.83**	--	--
BDC-05-22	BDC-05-22-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**1.12**	**9.35**	--	--
BDC-05-23	BDC-05-23-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**8.6**	**9.14**	--	--
BDC-05-23	BDC-05-23-111103	N	11/3/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**25.2**	**8.78**	--	--
BDC-05-23	BDC-05-23-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	**8.9**	**8.1**	--	--
BDC-05-23	BDC-05-23-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	**15.8**	**9.3**	--	--
BDC-05-23	BDC-05-23-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	**8.8**	**11.3**	--	--
BDC-05-23	BDC-05-23-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	**4.9**	**11.6**	--	--
BDC-05-23	BDC-05-23-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	1 U	**9.2**	--	--
BDC-05-23	BDC-05-23-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	**1.7**	**11**	--	--
BDC-05-23	BDC-05-23-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	**0.35 J**	**10.4**	--	--
BDC-05-23	BDC-05-23-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	**0.62 J**	**11.1**	--	--
BDC-05-23	BDC-05-23-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	**0.74 J**	**9.3**	--	--
BDC-05-23	BDC-05-23-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	**3.1**	**12.1**	--	--
BDC-05-23	BDC-05-23-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	**2.7**	**13.3**	--	--
BDC-05-23	BDC-05-23-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**1.9**	**10.1**	--	--
BDC-05-23	BDC-05-23-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**0.66 J**	**9.5**	--	--
BDC-05-23	BDC-05-23-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**0.74 J**	**7.5**	--	--
BDC-05-23	BDC-05-23-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.1**	--	--
BDC-05-23	BDC-05-23-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	**0.46 J**	**7.9 J**	--	--
BDC-05-23	BDC-05-23-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	**2.2**	**7.8**	--	--
BDC-05-23	BDC-05-23-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	**3**	**6.3**	--	--
BDC-05-23	BDC-05-23-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**2.8**	**7.3**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-23	BDC-05-23-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	**4.2**	**7.4**	--	--
BDC-05-23	BDC-05-23-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	**2.2**	**7.1**	--	--
BDC-05-23	BDC-05-23-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	**10.9**	**7.2**	--	--
BDC-05-23	BDC-05-23-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	**4.7**	**6.7**	--	--
BDC-05-23	BDC-05-23-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	**2.0**	**7.5**	--	--
BDC-05-23	BDC-05-23-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	**11.4**	**5.60**	--	--
BDC-05-23	BDC-05-23-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	**2.97**	**6.23**	--	--
BDC-05-23	BDC-05-23-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**12.7**	**6.27**	--	--
BDC-05-23	BDC-05-23-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	**4.07**	**6.92**	--	--
BDC-05-24	BDC-05-24-110731	N	7/31/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**1.1**	**10**	--	--
BDC-05-24	BDC-05-24-111101	N	11/1/2011	--	--	--	--	--	0.1 U	--	--	--	--	--	**0.3**	**8.08**	--	--
BDC-05-24	BDC-05-24-120219	N	2/19/2012	--	--	--	--	--	0.5 U	--	--	--	--	--	1.5 U	**9.8**	--	--
BDC-05-24	BDC-05-24-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	**0.85 J**	**9.1**	--	--
BDC-05-24	BDC-05-24-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**7.4**	--	--
BDC-05-24	BDC-05-24-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**10.7**	--	--
BDC-05-24	BDC-05-24-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	**1.1**	**7.2**	--	--
BDC-05-24	BDC-05-24-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	**0.82 J**	**7.4**	--	--
BDC-05-24	BDC-05-24-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	**0.47 J**	**8.6**	--	--
BDC-05-24	BDC-05-24-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	**1.4**	**8.7 J**	--	--
BDC-05-24	BDC-05-24-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	**0.81 J**	**7.1**	--	--
BDC-05-24	BDC-05-24-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	**0.87 J**	**8.2 J**	--	--
BDC-05-24	BDC-05-24-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	**0.36 J**	**9.5**	--	--
BDC-05-24	BDC-05-24-DUP-140806	FD	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	**0.47 J**	**9.4**	--	--
BDC-05-24	BDC-05-24-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	**1.8**	**4.2**	--	--
BDC-05-24	BDC-05-24-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**2.3**	**3.8**	--	--
BDC-05-24	BDC-05-24-DUP-150121	FD	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	**2.4**	**3.6**	--	--
BDC-05-24	BDC-05-24-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**0.97 J**	**3.2**	--	--
BDC-05-24	BDC-05-24-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	**0.93 J**	**3**	--	--
BDC-05-24	BDC-05-24-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	**6.2**	**2.2**	--	--
BDC-05-24	BDC-05-24-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	**5.1**	**2.9**	--	--
BDC-05-24	BDC-05-24-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	**0.43 J**	**8.3**	--	--
BDC-05-24	BDC-05-24-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**4.6**	--	--
BDC-05-24	BDC-05-DUP1-160420	FD	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	**0.89 J**	**4.2**	--	--
BDC-05-24	BDC-05-24-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	**2.2**	**2.6**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-05-24	BDC-05-24-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	**0.8 J**	**4.9**	--	--
BDC-05-24	BDC-05-24-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	**1.8**	**4**	--	--
BDC-05-24	BDC-05-24-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	**1.5**	**4.8**	--	--
BDC-05-24	BDC-05-24-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**5.7**	--	--
BDC-05-24	BDC-05-24-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	0.30 U	**8.4**	--	--
BDC-05-24	BDC-05-24-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**10.90**	--	--
BDC-05-24	BDC-05-24-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**12.51**	--	--
BDC-05-24	BDC-05-24-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	**0.379**	**11.40**	--	--
BDC-05-24	BDC-05-24-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	**0.515**	**11.80**	--	--
DPS17-1	DPS17-1-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	**3.08**	--	--
DPS17-1	DPS17-1(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	**18.8**	--	--
DPS17-1	DPS17-1(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	**20.6**	--	--
DPS17-2	DPS17-2-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	**3.28**	--	--
DPS17-3	DPS17-3-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	**4.25**	--	--
DPS17-4	DPS17-4-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	**6.43**	--	--
DPS17-5	DPS17-5-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	**1.94**	--	--
DPS17-6	DPS17-6-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--
DPS17-7	DPS17-7-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	**10.3**	--	--
DPS17-8	DPS17-8-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.88**	--	--
DPS17-9	DPS17-9-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.21**	--	--
DPS17-10	DPS17-10-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.04**	--	--
DPS17-11	DPS17-11-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.18**	--	--
DPS17-12	DPS17-12-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.76**	--	--
DPS17-13	DPS17-13-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**2.33**	--	--
DPS17-13	DUP OF DPS17-13-100818	FD	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**2.29**	--	--
DPS17-14	DPS17-14-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.8**	--	--
DPS17-15	DPS17-15-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.76**	--	--
DPS17-16	DPS17-16-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.0**	--	--
DPS17-17	DPS17-17-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**6.19**	--	--
DPS17-18	DPS17-18-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	**3.62**	--	--
DPS17-19	DPS17-19-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.89**	--	--
DPS17-19	DUP OF DPS17-19-101008	FD	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.88**	--	--
DPS17-19	DPS17-19(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	**25.4**	--	--
DPS17-19	DPS17-19(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	**24.2**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
DPS17-20	DPS17-20-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**3.81**	--	--
DPS17-21	DPS17-21-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**3.57**	--	--
DPS17-22	DPS17-22-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.89**	--	--
DPS17-23	DPS17-23-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	**6.85**	--	--
DPS17-24	DPS17-24-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	**8.57**	--	--
DPS17-24	DUP OF DPS17-24-101025	FD	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	**7.47**	--	--
DPS17-25	DPS17-25-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	**8.54**	--	--
DPS17-26	DPS17-26-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.83**	--	--
DPS17-27	DPS17-27-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.31**	--	--
DPS17-28	DPS17-28-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.71**	--	--
DPS17-29	DPS17-29-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.05**	--	--
DPS17-30	DPS17-30-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.23**	--	--
DPS17-31	DPS17-31-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**2.14**	--	--
DPS17-32	DPS17-32-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**7.98**	--	--
DPS17-33	DPS17-33-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.87**	--	--
DPS17-35	DPS17-35-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**9.09**	--	--
DPS17-36	DPS17-36-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**8.98**	--	--
DPS17-37	DPS17-37-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**10.2**	--	--
DPS17-38	DPS17-38-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**7.42**	--	--
DPS17-39	DPS17-39-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**7.23**	--	--
DPS17-40	DPS17-40-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**5.45**	--	--
DPS17-41	DPS17-41-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.44**	--	--
DPS17-42	DPS17-42-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**11.9**	--	--
DPS17-43	DPS17-43-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**8.64**	--	--
DPS17-44	DPS17-44-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.88**	--	--
DPS17-45	DPS17-45-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**9.38**	--	--
DPS17-45	DUP OF DPS17-45-101208	FD	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**10.7**	--	--
DPS17-46	DPS17-46-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**14.8**	--	--
DPS17-47	DPS17-47-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**12.5**	--	--
DPS17-48	DPS17-48-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**4.89**	--	--
DPS17-49	DPS17-49-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	**7.71**	--	--
SWMU-20																		
BDC-MW-6A	MW-06A-040615	N	6/15/2004	--	--	--	--	--	--	--	--	--	--	--	**58.9**	**18.8**	--	--
BDC-MW-6A	MW-06A-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**40.7**	**288**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-6A	MW-06A-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**44.8**	**80.8**	--	--
BDC-MW-6A	MW-06A-DUP-041019	FD	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**48.5**	**80.2**	--	--
BDC-MW-6A	MW-06A-050222	N	2/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**244**	--	--
BDC-MW-6A	MW-06A-050516	N	5/16/2005	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**145**	--	--
BDC-MW-6A	MW-06A-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	**3.1**	**54.2**	--	--
BDC-MW-6A	MW-06A-051114	N	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**31.8**	--	--
BDC-MW-6A	MW-06A-DUP-051114	FD	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**31.3**	--	--
BDC-MW-6A	MW-06A-060222	N	2/22/2006	--	--	--	--	--	--	--	--	--	--	--	**60.4**	**15.5**	--	--
BDC-MW-6A	MW-06A-060518	N	5/18/2006	--	--	--	--	--	--	--	--	--	--	--	**20.9**	**23.9**	--	--
BDC-MW-6A	MW-06A-DUP-060518	FD	5/18/2006	--	--	--	--	--	--	--	--	--	--	--	**21.4**	**23.2**	--	--
BDC-MW-6A	MW-06A-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**23.1**	**23.2**	--	--
BDC-MW-6A	MW-06A-061129	N	11/29/2006	--	--	--	--	--	--	--	--	--	--	--	**33.1**	**31.4**	--	--
BDC-MW-6A	DC-MW6A-070223	N	2/23/2007	--	--	--	--	--	--	--	--	--	--	--	**26.2**	**24.6**	--	--
BDC-MW-6A	MW-06A-070524	N	5/24/2007	--	--	--	--	--	--	--	--	--	--	--	**21**	**21.5**	--	--
BDC-MW-6A	MW-06A-071130	N	11/30/2007	--	--	--	--	--	--	--	--	--	--	--	**29.1**	**22.6**	--	--
BDC-MW-6A	MW-06A-080521	N	5/21/2008	--	--	--	--	--	--	--	--	--	--	--	**21**	**20.1**	--	--
BDC-MW-6A	MW-06A-DUP-080521	FD	5/21/2008	--	--	--	--	--	--	--	--	--	--	--	**21.3**	**20.6**	--	--
BDC-MW-6A	MW-06A-081125	N	11/25/2008	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**150**	--	--
BDC-MW-6A	MW-06A-DUP-081125	FD	11/25/2008	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**129**	--	--
BDC-MW-6A	MW-06A-090520	N	5/20/2009	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**38.2**	--	--
BDC-MW-6A	MW-06A-091119	N	11/19/2009	--	--	--	--	--	--	--	--	--	--	--	**0.8**	**25.4**	--	--
BDC-MW-6A	MW-06A-100524	N	5/24/2010	--	--	--	--	--	--	--	--	--	--	--	**16**	**19.3**	--	--
BDC-MW-6A	MW-06A-101110	N	11/11/2010	--	--	--	--	--	--	--	--	--	--	--	**0.4**	**20.2**	--	--
BDC-MW-6A	MW-06A-110504	N	5/4/2011	--	--	--	--	--	--	--	--	--	--	--	0.2 U	**13.6**	--	--
BDC-MW-6A	MW-06A-111113	N	11/13/2011	--	--	--	--	--	--	--	--	--	--	--	**0.3**	**12.7**	--	--
BDC-MW-6A	MW-06A-120515	N	5/15/2012	--	--	--	--	--	--	--	--	--	--	--	**4.3**	**11.6**	--	--
BDC-MW-6A	MW-06A-121114	N	11/14/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**9**	--	--
BDC-MW-6A	MW-06A-130521	N	5/21/2013	--	--	--	--	--	--	--	--	--	--	--	**3.3**	**8.8**	--	--
BDC-MW-6A	MW-06A-131112	N	11/12/2013	--	--	--	--	--	--	--	--	--	--	--	**5.8**	**8.3**	--	--
BDC-MW-6A	MW-06A-140507	N	5/7/2014	--	--	--	--	--	--	--	--	--	--	--	**11.2**	**7.2**	--	--
BDC-MW-6A	MW-06A-141105	N	11/5/2014	--	--	--	--	--	--	--	--	--	--	--	**13.9**	**7.2**	--	--
BDC-MW-6A	MW-06A-150429	N	4/29/2015	--	--	--	--	--	--	--	--	--	--	--	**17.5**	**5.2**	--	--
BDC-MW-6A	MW-06A-151026	N	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	**19.7**	**6.5**	--	--
BDC-MW-6A	MW-06A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**203**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-6A	MW-6A-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	**0.47 J**	**121**	--	--
BDC-MW-6A	DC-MW6A-170502	N	5/2/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**124**	--	--
BDC-MW-6A	MW-6A-171108	N	11/8/2017	--	--	--	--	--	--	--	--	--	--	--	**16.1**	**99.5**	--	--
BDC-MW-6A	MW-6A-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	**0.342**	**149.3**	--	--
BDC-MW-6A	MW-6A-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	**0.476**	**116.1**	--	--
BDC-MW-6A	MW-6A-190501	N	5/1/2019	--	--	--	--	--	--	--	--	--	--	--	**1.09**	**102.7**	--	--
BDC-MW-6A	MW-6A-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	**3.12**	**410.2**	--	--
BDC-MW-6B	MW-06B-040504	N	5/4/2004	--	--	--	--	--	--	--	--	--	--	--	**18.7**	**25.6**	--	--
BDC-MW-6B	MW-06B-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**33.8**	**177**	--	--
BDC-MW-6B	MW-06B-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**14.8**	**53.6**	--	--
BDC-MW-6B	MW-06B-050222	N	2/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**968**	--	--
BDC-MW-6B	MW-06B-050516	N	5/16/2005	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**336**	--	--
BDC-MW-6B	MW-06B-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**100**	--	--
BDC-MW-6B	MW-06B-051114	N	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**64.4**	--	--
BDC-MW-6B	MW-06B-060222	N	2/22/2006	--	--	--	--	--	--	--	--	--	--	--	**14.8**	**30.4**	--	--
BDC-MW-6B	MW-06B-060518	N	5/18/2006	--	--	--	--	--	--	--	--	--	--	--	**13.6**	**25.9**	--	--
BDC-MW-6B	MW-06B-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**12.9**	**14.7**	--	--
BDC-MW-6B	MW-06B-061129	N	11/29/2006	--	--	--	--	--	--	--	--	--	--	--	**10.9**	**25.2**	--	--
BDC-MW-6B	DC-MW6B-070223	N	2/23/2007	--	--	--	--	--	--	--	--	--	--	--	**25.0**	**21.1**	--	--
BDC-MW-6B	MW-06B-070524	N	5/24/2007	--	--	--	--	--	--	--	--	--	--	--	**11.3**	**21.4**	--	--
BDC-MW-6B	MW-06B-071130	N	11/30/2007	--	--	--	--	--	--	--	--	--	--	--	**26.3**	**26.5**	--	--
BDC-MW-6B	MW-06B-080521	N	5/21/2008	--	--	--	--	--	--	--	--	--	--	--	**21.1**	**20.4**	--	--
BDC-MW-6B	MW-06B-081125	N	11/25/2008	--	--	--	--	--	--	--	--	--	--	--	**0.2**	**19.6**	--	--
BDC-MW-6B	MW-06B-090520	N	5/20/2009	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**20.9**	--	--
BDC-MW-6B	MW-06B-091119	N	11/19/2009	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**20**	--	--
BDC-MW-6B	MW-06B-100524	N	5/24/2010	--	--	--	--	--	--	--	--	--	--	--	**3**	**19.1**	--	--
BDC-MW-6B	MW-06B-101111	N	11/11/2010	--	--	--	--	--	--	--	--	--	--	--	**8.6**	**15.8**	--	--
BDC-MW-6B	MW-06B-110504	N	5/4/2011	--	--	--	--	--	--	--	--	--	--	--	**19.7**	**12.6**	--	--
BDC-MW-6B	MW-06B-111113	N	11/13/2011	--	--	--	--	--	--	--	--	--	--	--	**0.3**	**14.8**	--	--
BDC-MW-6B	MW-06B-120515	N	5/15/2012	--	--	--	--	--	--	--	--	--	--	--	**10.9**	**11.4**	--	--
BDC-MW-6B	MW-06B-121114	N	11/14/2012	--	--	--	--	--	--	--	--	--	--	--	**7**	**13.7**	--	--
BDC-MW-6B	MW-06B-130521	N	5/21/2013	--	--	--	--	--	--	--	--	--	--	--	**20.1**	**11**	--	--
BDC-MW-6B	MW-06B-131112	N	11/12/2013	--	--	--	--	--	--	--	--	--	--	--	**4**	**15.5**	--	--
BDC-MW-6B	MW-06B-140507	N	5/7/2014	--	--	--	--	--	--	--	--	--	--	--	**2.8**	**10.2**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-6B	MW-06B-141105	N	11/5/2014	--	--	--	--	--	--	--	--	--	--	--	**4.7**	**6.9**	--	--
BDC-MW-6B	MW-06B-150429	N	4/29/2015	--	--	--	--	--	--	--	--	--	--	--	**0.99 J**	**4**	--	--
BDC-MW-6B	MW-06B-151026	N	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	**2**	**4.9**	--	--
BDC-MW-6B	MW-06B-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	**0.3 J**	**306**	--	--
BDC-MW-6B	MW-6B-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	**0.71 J**	**274**	--	--
BDC-MW-6B	MW-6B-170502	N	5/2/2017	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**149**	--	--
BDC-MW-6B	MW-6B-171108	N	11/8/2017	--	--	--	--	--	--	--	--	--	--	--	30.0 U	**320**	--	--
BDC-MW-6B	MW-6B-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**4147**	--	--
BDC-MW-6B	MW-6B-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	**1.01**	**1740**	--	--
BDC-MW-6B	MW-6B-190501	N	5/1/2019	--	--	--	--	--	--	--	--	--	--	--	**7.87**	**4692**	--	--
BDC-MW-6B	MW-6B-191120	N	11/20/2019	--	--	--	--	--	--	--	--	--	--	--	**1.69**	**1065**	--	--
BDC-MW-6C	MW-06C-040504	N	5/4/2004	--	--	--	--	--	--	--	--	--	--	--	**20.7**	**29**	--	--
BDC-MW-6C	MW-06C-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**42.7**	**1560**	--	--
BDC-MW-6C	MW-06C-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**18.1**	**464**	--	--
BDC-MW-6C	MW-06C-050222	N	2/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**858**	--	--
BDC-MW-6C	MW-06C-050516	N	5/16/2005	--	--	--	--	--	--	--	--	--	--	--	**0.2**	**111**	--	--
BDC-MW-6C	MW-06C-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**68.7**	--	--
BDC-MW-6C	MW-06C-051114	N	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**48.3**	--	--
BDC-MW-6C	MW-06C-060222	N	2/22/2006	--	--	--	--	--	--	--	--	--	--	--	**47.5**	**93.4**	--	--
BDC-MW-6C	MW-06C-060518	N	5/18/2006	--	--	--	--	--	--	--	--	--	--	--	**30.6**	**36.6**	--	--
BDC-MW-6C	MW-06C-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**31.8**	**13.4**	--	--
BDC-MW-6C	MW-06C-061129	N	11/29/2006	--	--	--	--	--	--	--	--	--	--	--	**27.3**	**46.4**	--	--
BDC-MW-6C	MW-6C-070223	N	2/23/2007	--	--	--	--	--	--	--	--	--	--	--	**25.9**	**39.0**	--	--
BDC-MW-6C	MW-06C-070524	N	5/24/2007	--	--	--	--	--	--	--	--	--	--	--	**20.8**	**34**	--	--
BDC-MW-6C	MW-06C-071130	N	11/30/2007	--	--	--	--	--	--	--	--	--	--	--	**32.6**	**40.2**	--	--
BDC-MW-6C	MW-06C-080521	N	5/21/2008	--	--	--	--	--	--	--	--	--	--	--	**21**	**31.9**	--	--
BDC-MW-6C	MW-06C-081125	N	11/25/2008	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**634**	--	--
BDC-MW-6C	MW-06C-090520	N	5/20/2009	--	--	--	--	--	--	--	--	--	--	--	**0.8**	**38.2**	--	--
BDC-MW-6C	MW-06C-091119	N	11/19/2009	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**42.8**	--	--
BDC-MW-9A	MW-09A-040503	N	5/3/2004	--	--	--	--	--	--	--	--	--	--	--	**64.2**	**16.2**	--	--
BDC-MW-9A	MW-09A-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**51.8**	**56.8**	--	--
BDC-MW-9A	MW-09A-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**77.4**	**19.6**	--	--
BDC-MW-9A	MW-09A-050221	N	2/21/2005	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**2110**	--	--
BDC-MW-9A	MW-09A-050511	N	5/11/2005	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**1260**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-9A	MW-09A-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**156**	--	--
BDC-MW-9A	MW-09A-051114	N	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**62.8**	--	--
BDC-MW-9A	MW-09A-060221	N	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	**0.2**	**58.8**	--	--
BDC-MW-9A	MW-09A-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	**63.4**	**44.4**	--	--
BDC-MW-9A	MW-09A-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**56.8**	**50**	--	--
BDC-MW-9A	MW-09A-061127	N	11/27/2006	--	--	--	--	--	--	--	--	--	--	--	**52.5**	**51**	--	--
BDC-MW-9A	MW-9A-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	**0.3**	**48.8**	--	--
BDC-MW-9A	MW-09A-070522	N	5/22/2007	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**43.1**	--	--
BDC-MW-9A	MW-09A-DUP-070522	FD	5/22/2007	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**41.2**	--	--
BDC-MW-9A	MW-9A-071129	N	11/29/2007	--	--	--	--	--	--	--	--	--	--	--	**45.4**	**40.6**	--	--
BDC-MW-9A	MW-09A-080519	N	5/19/2008	--	--	--	--	--	--	--	--	--	--	--	**29.4**	**31**	--	--
BDC-MW-9A	MW-09A-DUP-080519	FD	5/19/2008	--	--	--	--	--	--	--	--	--	--	--	**29.4**	**30.5**	--	--
BDC-MW-9A	MW-09A-081124	N	11/24/2008	--	--	--	--	--	--	--	--	--	--	--	2 U	**5600**	--	--
BDC-MW-9A	MW-09A-DUP-081124	FD	11/24/2008	--	--	--	--	--	--	--	--	--	--	--	2 U	**5440**	--	--
BDC-MW-9A	MW-09A-090518	N	5/18/2009	--	--	--	--	--	--	--	--	--	--	--	2 U	**1620**	--	--
BDC-MW-9A	MW-09A-DUP-090518	FD	5/18/2009	--	--	--	--	--	--	--	--	--	--	--	2 U	**1480**	--	--
BDC-MW-9A	MW-09A-091116	N	11/16/2009	--	--	--	--	--	--	--	--	--	--	--	1 U	**403**	--	--
BDC-MW-9A	MW-09A-100520	N	5/20/2010	--	--	--	--	--	--	--	--	--	--	--	1 U	**72.8**	--	--
BDC-MW-9A	MW-09A-101110	N	11/10/2010	--	--	--	--	--	--	--	--	--	--	--	**0.3**	**70**	--	--
BDC-MW-9A	MW-09A-110503	N	5/3/2011	--	--	--	--	--	--	--	--	--	--	--	0.2 U	**44.4**	--	--
BDC-MW-9A	MW-09A-111113	N	11/13/2011	--	--	--	--	--	--	--	--	--	--	--	**0.4**	**39.4**	--	--
BDC-MW-9A	MW-09A-120514	N	5/14/2012	--	--	--	--	--	--	--	--	--	--	--	**0.4 J**	**30.5**	--	--
BDC-MW-9A	MW-09A-121114	N	11/14/2012	--	--	--	--	--	--	--	--	--	--	--	**0.53 J**	**30.9**	--	--
BDC-MW-9A	MW-09A-130521	N	5/21/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**33**	--	--
BDC-MW-9A	MW-09A-131112	N	11/12/2013	--	--	--	--	--	--	--	--	--	--	--	**0.41 J**	**30.2**	--	--
BDC-MW-9A	MW-09A-140507	N	5/7/2014	--	--	--	--	--	--	--	--	--	--	--	**0.5 J**	**21.5**	--	--
BDC-MW-9A	MW-09A-141105	N	11/5/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**24.8**	--	--
BDC-MW-9A	MW-09A-150429	N	4/29/2015	--	--	--	--	--	--	--	--	--	--	--	**0.58 J**	**17.8**	--	--
BDC-MW-9A	MW-09A-151026	N	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	**0.57 J**	**21.7**	--	--
BDC-MW-9A	MW-09A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**33.3**	--	--
BDC-MW-9A	MW-9A-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**17.5**	--	--
BDC-MW-9A	MW-9A-170502	N	5/2/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**22.3**	--	--
BDC-MW-9A	MW-9A-171108	N	11/8/2017	--	--	--	--	--	--	--	--	--	--	--	**0.85 J**	**16.7**	--	--
BDC-MW-9A	MW-9A-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	**0.107**	**25.22**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-9A	BDC-DUP1-180501	FD	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	**0.100**	**25.21**	--	--
BDC-MW-9A	MW-9A-181105	N	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	**0.409 J**	**22.61**	--	--
BDC-MW-9A	BDC-DUP1-181105	FD	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	**0.272 J**	**21.67**	--	--
BDC-MW-9A	MW-9A-190501	N	5/1/2019	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**33.17**	--	--
BDC-MW-9A	BDC-DUP1-190501	FD	5/1/2019	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**32.33**	--	--
BDC-MW-9A	MW-9A-191104	N	11/4/2019	--	--	--	--	--	--	--	--	--	--	--	**1.11 J**	**21.06**	--	--
BDC-MW-9A	BDC-DUP1-191104	FD	11/4/2019	--	--	--	--	--	--	--	--	--	--	--	**0.842 J**	**21.92**	--	--
BDC-MW-9B	MW-09B-040503	N	5/3/2004	--	--	--	--	--	--	--	--	--	--	--	**61.4**	**20.7**	--	--
BDC-MW-9B	MW-09B-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**73**	**29.7**	--	--
BDC-MW-9B	MW-09B-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**59.6**	**24.3**	--	--
BDC-MW-9B	MW-09B-050221	N	2/21/2005	--	--	--	--	--	--	--	--	--	--	--	**1**	**608**	--	--
BDC-MW-9B	MW-09B-050511	N	5/11/2005	--	--	--	--	--	--	--	--	--	--	--	**0.4**	**219**	--	--
BDC-MW-9B	MW-09B-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**17.6**	--	--
BDC-MW-9B	MW-09B-051114	N	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**51.2**	--	--
BDC-MW-9B	MW-09B-060221	N	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**46.4**	--	--
BDC-MW-9B	MW-09B-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	**33.9**	**45.6**	--	--
BDC-MW-9B	MW-09B-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**55.4**	**250**	--	--
BDC-MW-9B	MW-09B-061127	N	11/27/2006	--	--	--	--	--	--	--	--	--	--	--	**50.2**	**78.2**	--	--
BDC-MW-9B	DC-MW9B-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	**0.2**	**64.0**	--	--
BDC-MW-9B	MW-09B-070522	N	5/22/2007	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**35.3**	--	--
BDC-MW-9B	DC-MW9B-071129	N	11/29/2007	--	--	--	--	--	--	--	--	--	--	--	**58.3**	**44.5**	--	--
BDC-MW-9B	MW-09B-080519	N	5/19/2008	--	--	--	--	--	--	--	--	--	--	--	**39.1**	**37.3**	--	--
BDC-MW-9B	MW-09B-081124	N	11/24/2008	--	--	--	--	--	--	--	--	--	--	--	1 U	**27**	--	--
BDC-MW-9B	MW-09B-090518	N	5/18/2009	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**37.1**	--	--
BDC-MW-9B	MW-09B-091116	N	11/16/2009	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**28.1**	--	--
BDC-MW-9C	MW-09C-040503	N	5/3/2004	--	--	--	--	--	--	--	--	--	--	--	**19.1**	**28.5**	--	--
BDC-MW-9C	MW-09C-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**23.2**	**302**	--	--
BDC-MW-9C	MW-09C-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**12.2**	**99.6**	--	--
BDC-MW-9C	MW-09C-050221	N	2/21/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**300**	--	--
BDC-MW-9C	MW-09C-050511	N	5/11/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**44.6**	--	--
BDC-MW-9C	MW-09C-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**52**	--	--
BDC-MW-9C	MW-09C-051114	N	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**50.6**	--	--
BDC-MW-9C	MW-09C-060221	N	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**44.2**	--	--
BDC-MW-9C	MW-09C-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	**27.9**	**42.1**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement														
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-9C	MW-09C-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**28.8**	**33**	--	--
BDC-MW-9C	MW-09C-061127	N	11/27/2006	--	--	--	--	--	--	--	--	--	--	--	**26.7**	**44**	--	--
BDC-MW-9C	DC-MW9C-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	**0.2**	**33.8**	--	--
BDC-MW-9C	MW-09C-070522	N	5/22/2007	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**25.4**	--	--
BDC-MW-9C	MW-9C-071129	N	11/29/2007	--	--	--	--	--	--	--	--	--	--	--	**27.3**	**27.1**	--	--
BDC-MW-9C	MW-09C-080519	N	5/19/2008	--	--	--	--	--	--	--	--	--	--	--	**18.6**	**22.3**	--	--
BDC-MW-9C	MW-09C-081124	N	11/24/2008	--	--	--	--	--	--	--	--	--	--	--	2 U	**334**	--	--
BDC-MW-9C	MW-09C-090518	N	5/18/2009	--	--	--	--	--	--	--	--	--	--	--	0.5 U	**24**	--	--
BDC-MW-9C	MW-09C-091116	N	11/16/2009	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**20.7**	--	--
BDC-MW-10A	MW-10A-040503	N	5/3/2004	--	--	--	--	--	--	--	--	--	--	--	**37.8**	**20**	--	--
BDC-MW-10A	MW-10A-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**38.9**	**59.6**	--	--
BDC-MW-10A	MW-10A-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**37.8**	**24**	--	--
BDC-MW-10A	MW-10A-050221	N	2/21/2005	--	--	--	--	--	--	--	--	--	--	--	**24.3**	**22.4**	--	--
BDC-MW-10A	MW-10A-050511	N	5/11/2005	--	--	--	--	--	--	--	--	--	--	--	**27.9**	**25.9**	--	--
BDC-MW-10A	MW-10A-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	**48.8**	**31.4**	--	--
BDC-MW-10A	MW-10A-051114	N	11/14/2005	--	--	--	--	--	--	--	--	--	--	--	**50.6**	**34.1**	--	--
BDC-MW-10A	MW-10A-060221	N	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	**53.9**	**45.8**	--	--
BDC-MW-10A	MW-10A-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	**57.4**	**49.2**	--	--
BDC-MW-10A	MW-10A-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**57.5**	**50.8**	--	--
BDC-MW-10A	MW-10A-061127	N	11/27/2006	--	--	--	--	--	--	--	--	--	--	--	**57.9**	**56**	--	--
BDC-MW-10A	DC-MW10A-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	**20.4**	**56.4**	--	--
BDC-MW-10A	MW-10A-070522	N	5/22/2007	--	--	--	--	--	--	--	--	--	--	--	**10.2**	**47.3**	--	--
BDC-MW-10A	DC-MW10A-071129	N	11/29/2007	--	--	--	--	--	--	--	--	--	--	--	**47.9**	**47.8**	--	--
BDC-MW-10A	MW-10A-080519	N	5/19/2008	--	--	--	--	--	--	--	--	--	--	--	**32.5**	**33.3**	--	--
BDC-MW-10A	MW-10A-081124	N	11/24/2008	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**1200**	--	--
BDC-MW-10A	MW-10A-090518	N	5/18/2009	--	--	--	--	--	--	--	--	--	--	--	1 U	**168**	--	--
BDC-MW-10A	MW-10A-091116	N	11/16/2009	--	--	--	--	--	--	--	--	--	--	--	1 U	**69.2**	--	--
BDC-MW-10A	MW-10A-100520	N	5/20/2010	--	--	--	--	--	--	--	--	--	--	--	1 U	**60.4**	--	--
BDC-MW-10A	MW-10A-101110	N	11/10/2010	--	--	--	--	--	--	--	--	--	--	--	**0.5**	**56.8**	--	--
BDC-MW-10A	MW-10A-110503	N	5/3/2011	--	--	--	--	--	--	--	--	--	--	--	0.2 U	**41.6**	--	--
BDC-MW-10A	MW-10A-111113	N	11/13/2011	--	--	--	--	--	--	--	--	--	--	--	**0.3**	**33.8**	--	--
BDC-MW-10A	MW-10A-120514	N	5/14/2012	--	--	--	--	--	--	--	--	--	--	--	**0.32 J**	**38**	--	--
BDC-MW-10A	MW-10A-121114	N	11/14/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**30.6**	--	--
BDC-MW-10A	MW-10A-130521	N	5/21/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**29.5**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-10A	MW-10A-131112	N	11/12/2013	--	--	--	--	--	--	--	--	--	--	--	**0.38 J**	**29.1**	--	--
BDC-MW-10A	MW-10A-140507	N	5/7/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**27.9**	--	--
BDC-MW-10A	MW-10A-141105	N	11/5/2014	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**26.1**	--	--
BDC-MW-14A	MW-14A-040504	N	5/4/2004	--	--	--	--	--	--	--	--	--	--	--	**38.9**	**20.7**	--	--
BDC-MW-14A	MW-14A-040823	N	8/23/2004	--	--	--	--	--	--	--	--	--	--	--	**30.1**	**22.6**	--	--
BDC-MW-14A	MW-14A-041019	N	10/19/2004	--	--	--	--	--	--	--	--	--	--	--	**43.3**	**20.6**	--	--
BDC-MW-14A	MW-14A-050221	N	2/21/2005	--	--	--	--	--	--	--	--	--	--	--	**3.8**	**44**	--	--
BDC-MW-14A	MW-14A-050516	N	5/16/2005	--	--	--	--	--	--	--	--	--	--	--	2 U	**8620**	--	--
BDC-MW-14A	MW-14A-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	2 U	**5380**	--	--
BDC-MW-14A	MW-14A-051115	N	11/15/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**602**	--	--
BDC-MW-14A	MW-14A-060221	N	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**180**	--	--
BDC-MW-14A	MW-14A-DUP-060221	FD	2/21/2006	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**171**	--	--
BDC-MW-14A	MW-14A-060517	N	5/17/2006	--	--	--	--	--	--	--	--	--	--	--	**12**	**67.1**	--	--
BDC-MW-14A	MW-14A-060816	N	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**16.5**	**66**	--	--
BDC-MW-14A	MW-14A-DUP-060816	FD	8/16/2006	--	--	--	--	--	--	--	--	--	--	--	**16.6**	**69.8**	--	--
BDC-MW-14A	MW-14A-061129	N	11/29/2006	--	--	--	--	--	--	--	--	--	--	--	**11.8**	**72**	--	--
BDC-MW-14A	DC-MW14A-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	**0.2**	**34.9**	--	--
BDC-MW-14A	MW-14A-070523	N	5/23/2007	--	--	--	--	--	--	--	--	--	--	--	**8.6**	**27.5**	--	--
BDC-MW-14A	DC-MW14A-071203	N	12/3/2007	--	--	--	--	--	--	--	--	--	--	--	**15.9**	**55.6**	--	--
BDC-MW-14A	MW-14A-080520	N	5/20/2008	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**26.3**	--	--
BDC-MW-14A	MW-14A-081124	N	11/24/2008	--	--	--	--	--	--	--	--	--	--	--	**194**	**8.68**	--	--
BDC-MW-14A	MW-14A-090520	N	5/20/2009	--	--	--	--	--	--	--	--	--	--	--	**20**	**9.83**	--	--
BDC-MW-14A	MW-14A-DUP-090520	FD	5/20/2009	--	--	--	--	--	--	--	--	--	--	--	**17.8**	**9.99**	--	--
BDC-MW-14A	MW-14A-091117	N	11/17/2009	--	--	--	--	--	--	--	--	--	--	--	**165**	**6.22**	--	--
BDC-MW-14A	MW-14A-100524	N	5/24/2010	--	--	--	--	--	--	--	--	--	--	--	**5.1**	**8.07**	--	--
BDC-MW-14A	MW-14A-101110	N	11/10/2010	--	--	--	--	--	--	--	--	--	--	--	**38.6**	**6.88**	--	--
BDC-MW-14A	MW-14A-110505	N	5/5/2011	--	--	--	--	--	--	--	--	--	--	--	**8.4**	**3.28**	--	--
BDC-MW-14A	MW-14A-111113	N	11/13/2011	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**8.05**	--	--
BDC-MW-14A	MW-14A-120514	N	5/14/2012	--	--	--	--	--	--	--	--	--	--	--	**3.4**	**5.9**	--	--
BDC-MW-14A	MW-14A-121114	N	11/14/2012	--	--	--	--	--	--	--	--	--	--	--	**79**	**6.5**	--	--
BDC-MW-14A	MW-14A-130521	N	5/21/2013	--	--	--	--	--	--	--	--	--	--	--	**2.3**	**6.5**	--	--
BDC-MW-14A	MW-14A-131112	N	11/12/2013	--	--	--	--	--	--	--	--	--	--	--	**0.52 J**	**8**	--	--
BDC-MW-14A	MW-14A-140507	N	5/7/2014	--	--	--	--	--	--	--	--	--	--	--	**19.9**	**6.5**	--	--
BDC-MW-14A	MW-14A-141105	N	11/5/2014	--	--	--	--	--	--	--	--	--	--	--	**23.6**	**6.8**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-17A	MW-17A-060515	N	5/15/2006	--	--	--	--	--	**1.37**	**1.39**	**0.021**	--	--	--	**27**	--	--	--
BDC-MW-17A	MW-17A-091112	N	11/12/2009	--	--	--	--	--	**0.9**	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-100517	N	5/17/2010	--	--	--	--	--	**1.6**	--	1.0 U	--	--	--	**21.0**	--	--	--
BDC-MW-17A	MW-17A-101108	N	11/8/2010	--	--	--	--	--	**0.1**	--	1 U	--	--	--	**15.7**	--	--	--
BDC-MW-17A	MW-17A-110503	N	5/3/2011	--	--	--	--	--	**1.6**	--	0.1 U	--	--	--	**19.8**	--	--	--
BDC-MW-17A	MW-17A-110801	N	8/1/2011	--	--	--	--	--	**0.5**	--	0.1 U	--	--	--	**20.5**	--	--	--
BDC-MW-17A	MW-17A-111101	N	11/1/2011	--	--	--	--	--	**0.3**	--	0.1 U	--	--	--	**23.2**	--	--	--
BDC-MW-17A	MW-17A-120503	N	5/3/2012	--	--	--	--	--	**4.4**	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-120904	N	9/4/2012	--	--	--	--	--	**2.0**	--	--	--	--	--	**26.8**	--	--	--
BDC-MW-17A	MW-17A-121113	N	11/13/2012	--	--	--	--	--	**0.59**	--	--	--	--	--	**22.9**	--	--	--
BDC-MW-17A	MW-17A-130520	N	5/20/2013	--	--	--	--	--	**2.9**	--	--	--	--	--	**26.8**	--	--	--
BDC-MW-17A	BDC-MW-17A-131119	N	11/19/2013	--	--	--	--	--	**1.3**	--	--	--	--	--	**23.9**	--	--	--
BDC-MW-17A	DC-MW-17A-140506	N	5/6/2014	--	--	--	--	--	**2.2**	--	--	--	--	--	**23.7**	--	--	--
BDC-MW-17A	DC-MW-17A-141104	N	11/4/2014	--	--	--	--	--	**0.16**	--	--	--	--	--	**26**	--	--	--
BDC-MW-17A	DC-MW-17A-150428	N	4/28/2015	--	--	--	--	--	**1.6**	--	--	--	--	--	**26.3**	--	--	--
BDC-MW-17A	DC-MW-17A-151026	N	10/26/2015	--	--	--	--	--	**0.91**	--	--	--	--	--	**29**	--	--	--
BDC-MW-17A	DC-MW-17A-160413	N	4/13/2016	--	--	--	--	--	**1.7**	--	--	--	--	--	**0.9 J**	--	--	--
BDC-MW-17A	MW-17A-161101	N	11/1/2016	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-170503	N	5/3/2017	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-171107	N	11/7/2017	--	--	--	--	--	0.10 U	--	--	--	--	--	0.30 U	--	--	--
BDC-MW-17A	MW-17A-180501	N	5/1/2018	--	--	--	--	--	0.500 U	--	--	--	--	--	0.500 U	--	--	--
BDC-MW-17A	MW-17A-181105	N	11/5/2018	--	--	--	--	--	1.00 U	--	--	--	--	--	0.200 U	--	--	--
BDC-MW-17A	MW-17A-190501	N	5/1/2019	--	--	--	--	--	0.100 U	--	--	--	--	--	**0.732**	--	--	--
BDC-MW-17A	MW-17A-191105	N	11/5/2019	--	--	--	--	--	**0.741**	--	--	--	--	--	**2.91**	--	--	--
BDC-MW-18A	MW-18A-060515	N	5/15/2006	--	--	--	--	--	**0.154**	**0.185**	**0.031**	--	--	--	**64.8**	--	--	--
BDC-MW-18A	MW-18A-091112	N	11/12/2009	--	--	--	--	--	**0.8**	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-100517	N	5/17/2010	--	--	--	--	--	**1.0**	--	1.0 U	--	--	--	**32.2**	--	--	--
BDC-MW-18A	MW-18A-101108	N	11/8/2010	--	--	--	--	--	**0.1**	--	0.1 U	--	--	--	**14.2**	--	--	--
BDC-MW-18A	MW-18A-110503	N	5/3/2011	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**31.5**	--	--	--
BDC-MW-18A	MW-18A-110801	N	8/1/2011	--	--	--	--	--	**1.1**	--	0.1 U	--	--	--	**42.2**	--	--	--
BDC-MW-18A	MW-18A-111101	N	11/1/2011	--	--	--	--	--	**0.7**	--	0.1 U	--	--	--	**93.3**	--	--	--
BDC-MW-18A	MW-18A-120503	N	5/3/2012	--	--	--	--	--	0.10 U	--	0.1 U	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-120904	N	9/4/2012	--	--	--	--	--	0.10 U	--	--	--	--	--	**19.5**	--	--	--
BDC-MW-18A	MW-18A-121113	N	11/13/2012	--	--	--	--	--	0.10 U	--	--	--	--	--	**21.5**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-18A	MW-18A-130520	N	5/20/2013	--	--	--	--	--	0.10 U	--	--	--	--	--	**19.6**	--	--	--
BDC-MW-18A	BDC-MW-18A-131119	N	11/19/2013	--	--	--	--	--	0.1 U	--	--	--	--	--	**15**	--	--	--
BDC-MW-18A	DC-MW-18A-140506	N	5/6/2014	--	--	--	--	--	0.1 U	--	--	--	--	--	**26.1**	--	--	--
BDC-MW-18A	DC-MW-18A-141104	N	11/4/2014	--	--	--	--	--	0.1 U	--	--	--	--	--	**21**	--	--	--
BDC-MW-18A	DC-MW-18A-150428	N	4/28/2015	--	--	--	--	--	**0.11**	--	--	--	--	--	**19.1**	--	--	--
BDC-MW-18A	DC-MW-18A-151026	N	10/26/2015	--	--	--	--	--	0.1 U	--	--	--	--	--	**23.4**	--	--	--
BDC-MW-18A	DC-MW-18A-160413	N	4/13/2016	--	--	--	--	--	**0.1**	--	--	--	--	--	**42.8**	--	--	--
BDC-MW-18A	MW-18A-161101	N	11/1/2016	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-170503	N	5/3/2017	--	--	--	--	--	**0.26**	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-171107	N	11/7/2017	--	--	--	--	--	0.10 U	--	--	--	--	--	**14.2**	--	--	--
BDC-MW-18A	MW-18A-180501	N	5/1/2018	--	--	--	--	--	0.100 U	--	--	--	--	--	**36.8**	--	--	--
BDC-MW-18A	MW-18A-181105	N	11/5/2018	--	--	--	--	--	0.100 U	--	--	--	--	--	**13.3**	--	--	--
BDC-MW-18A	MW-18A-190501	N	5/1/2019	--	--	--	--	--	0.100 U	--	--	--	--	--	**17.6**	--	--	--
BDC-MW-18A	MW-18A-191105	N	11/5/2019	--	--	--	--	--	0.100 U	--	--	--	--	--	**11.5**	--	--	--
BDC-MW-19A	MW-19A-050221	N	2/21/2005	--	--	--	--	--	--	--	--	--	--	--	**47.4**	**15.5**	--	--
BDC-MW-19A	MW-19A-050512	N	5/12/2005	--	--	--	--	--	--	--	--	--	--	--	**31.3**	**14.2**	--	--
BDC-MW-19A	MW-19A-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	**68.3**	**10.5**	--	--
BDC-MW-19A	MW-19A-051115	N	11/15/2005	--	--	--	--	--	--	--	--	--	--	--	**95.9**	**9.3**	--	--
BDC-MW-19A	MW-19A-060222	N	2/22/2006	--	--	--	--	--	--	--	--	--	--	--	**124**	**31.3**	--	--
BDC-MW-19A	MW-19A-060517	N	5/17/2006	--	--	--	--	--	--	--	--	--	--	--	**73.4**	**15.7**	--	--
BDC-MW-19A	MW-19A-060815	N	8/15/2006	--	--	--	--	--	--	--	--	--	--	--	**47.3**	**11.5**	--	--
BDC-MW-19A	MW-19A-061127	N	11/27/2006	--	--	--	--	--	--	--	--	--	--	--	**41.9**	**13.6**	--	--
BDC-MW-19A	DC-MW19A-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	**20.7**	**19.8**	--	--
BDC-MW-19A	MW-19A-070522	N	5/22/2007	--	--	--	--	--	--	--	--	--	--	--	**30.8**	**15.4**	--	--
BDC-MW-19A	DC-MW19A-071129	N	11/29/2007	--	--	--	--	--	--	--	--	--	--	--	**37.2**	**14.3**	--	--
BDC-MW-19A	MW-19A-080520	N	5/20/2008	--	--	--	--	--	--	--	--	--	--	--	**20.9**	**11.5**	--	--
BDC-MW-19A	MW-19A-081123	N	11/23/2008	--	--	--	--	--	--	--	--	--	--	--	**46.1**	**10.6**	--	--
BDC-MW-19A	MW-19A-090519	N	5/19/2009	--	--	--	--	--	--	--	--	--	--	--	**28.6**	**12.8**	--	--
BDC-MW-19A	MW-19A-091118	N	11/18/2009	--	--	--	--	--	--	--	--	--	--	--	**22.1**	**10.7**	--	--
BDC-MW-21A	MW-21A-060515	N	5/15/2006	--	--	--	--	--	**0.136**	**0.136**	0.01 U	--	--	--	**54.9**	--	--	--
BDC-MW-21A	MW-21A-091112	N	11/12/2009	--	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-100517	N	5/17/2010	--	--	--	--	--	**0.2**	--	1.0 U	--	--	--	**11.9**	--	--	--
BDC-MW-21A	MW-21A-101110	N	11/8/2010	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**5.9**	--	--	--
BDC-MW-21A	MW-21A-110503	N	5/3/2011	--	--	--	--	--	**0.2**	--	0.1 U	--	--	--	**52.1**	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-21A	MW-21A-110801	N	8/1/2011	--	--	--	--	--	**0.1**	--	0.1 U	--	--	--	**26.7**	--	--	--
BDC-MW-21A	MW-21A-111101	N	11/1/2011	--	--	--	--	--	0.1 U	--	0.1 U	--	--	--	**9.3**	--	--	--
BDC-MW-21A	MW-21A-120503	N	5/3/2012	--	--	--	--	--	**0.17**	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-120904	N	9/4/2012	--	--	--	--	--	0.10 U	--	--	--	--	--	**6.7**	--	--	--
BDC-MW-21A	MW-21A-121113	N	11/13/2012	--	--	--	--	--	**0.16**	--	--	--	--	--	**18.5**	--	--	--
BDC-MW-21A	MW-21A-130520	N	5/20/2013	--	--	--	--	--	**0.10**	--	--	--	--	--	**13.5**	--	--	--
BDC-MW-21A	BDC-MW-21A-131119	N	11/19/2013	--	--	--	--	--	0.1 U	--	--	--	--	--	**15.6 J**	--	--	--
BDC-MW-21A	DC-MW-21A-140506	N	5/6/2014	--	--	--	--	--	0.1 U	--	--	--	--	--	**7.6**	--	--	--
BDC-MW-21A	DC-MW-21A-141104	N	11/4/2014	--	--	--	--	--	0.1 U	--	--	--	--	--	**5.1**	--	--	--
BDC-MW-21A	DC-MW-21A-150428	N	4/28/2015	--	--	--	--	--	0.1 U	--	--	--	--	--	**5.3**	--	--	--
BDC-MW-21A	DC-MW-21A-151026	N	10/26/2015	--	--	--	--	--	**0.11**	--	--	--	--	--	**3.9**	--	--	--
BDC-MW-21A	DC-MW-21A-160413	N	4/13/2016	--	--	--	--	--	0.1 U	--	--	--	--	--	**4.9**	--	--	--
BDC-MW-21A	MW-21A-161101	N	11/1/2016	--	--	--	--	--	**0.1**	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-170503	N	5/3/2017	--	--	--	--	--	**0.19**	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-171107	N	11/7/2017	--	--	--	--	--	0.10 U	--	--	--	--	--	**11.0**	--	--	--
BDC-MW-21A	MW-21A-180501	N	5/1/2018	--	--	--	--	--	0.100 U	--	--	--	--	--	**7.53**	--	--	--
BDC-MW-21A	MW-21A-181105	N	11/5/2018	--	--	--	--	--	0.100 U	--	--	--	--	--	**4.88**	--	--	--
BDC-MW-21A	MW-21A-190501	N	5/1/2019	--	--	--	--	--	**0.125**	--	--	--	--	--	**11.4**	--	--	--
BDC-MW-21A	MW-21A-191105	N	11/5/2019	--	--	--	--	--	0.100 U	--	--	--	--	--	**4.35**	--	--	--
BDC-MW-22A	MW-22A-050321	N	3/21/2005	--	--	--	--	--	--	--	--	--	--	--	**12.8**	**11.1**	--	--
BDC-MW-22A	MW-22A-050512	N	5/12/2005	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**31.3**	--	--
BDC-MW-22A	MW-22A-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	**3**	**26.5**	--	--
BDC-MW-22A	MW-22A-051116	N	11/16/2005	--	--	--	--	--	--	--	--	--	--	--	**1.3**	**29.9**	--	--
BDC-MW-22A	MW-22A-060222	N	2/22/2006	--	--	--	--	--	--	--	--	--	--	--	**59**	**32**	--	--
BDC-MW-22A	MW-22A-060517	N	5/17/2006	--	--	--	--	--	--	--	--	--	--	--	**32.7**	**17.6**	--	--
BDC-MW-22A	MW-22A-060815	N	8/15/2006	--	--	--	--	--	--	--	--	--	--	--	**54.7**	**24**	--	--
BDC-MW-22A	MW-22A-061130	N	11/30/2006	--	--	--	--	--	--	--	--	--	--	--	**40**	**25.2**	--	--
BDC-MW-22A	MW-22A-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**22.4**	--	--
BDC-MW-22A	MW-22A-070523	N	5/23/2007	--	--	--	--	--	--	--	--	--	--	--	**27.3**	**18.2**	--	--
BDC-MW-22A	DC-MW22A-071203	N	12/3/2007	--	--	--	--	--	--	--	--	--	--	--	**12.3**	**16.0**	--	--
BDC-MW-22A	MW-22A-080520	N	5/20/2008	--	--	--	--	--	--	--	--	--	--	--	**20.2**	**13.8**	--	--
BDC-MW-22A	MW-22A-081123	N	11/23/2008	--	--	--	--	--	--	--	--	--	--	--	**2.6**	**19.2**	--	--
BDC-MW-22A	MW-22A-090519	N	5/19/2009	--	--	--	--	--	--	--	--	--	--	--	**3.4**	**21**	--	--
BDC-MW-22A	MW-22A-091118	N	11/18/2009	--	--	--	--	--	--	--	--	--	--	--	**2.1**	**13.8**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-22A	MW-22A-100524	N	5/24/2010	--	--	--	--	--	--	--	--	--	--	--	**0.6**	**15.1**	--	--
BDC-MW-22A	MW-22A-101111	N	11/11/2010	--	--	--	--	--	--	--	--	--	--	--	**0.5**	**21.8**	--	--
BDC-MW-22A	MW-22A-110504	N	5/4/2011	--	--	--	--	--	--	--	--	--	--	--	**0.6**	**22.4**	--	--
BDC-MW-22A	MW-22A-111113	N	11/13/2011	--	--	--	--	--	--	--	--	--	--	--	**0.4**	**17.6**	--	--
BDC-MW-22A	MW-22A-120514	N	5/14/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**25.4**	--	--
BDC-MW-22A	MW-22A-121114	N	11/14/2012	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**22.7**	--	--
BDC-MW-22A	MW-22A-130520	N	5/20/2013	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**24.6**	--	--
BDC-MW-22A	MW-22A-131112	N	11/12/2013	--	--	--	--	--	--	--	--	--	--	--	**1.8**	**19.8**	--	--
BDC-MW-22A	MW-22A-140507	N	5/7/2014	--	--	--	--	--	--	--	--	--	--	--	**0.66 J**	**23.6**	--	--
BDC-MW-22A	MW-22A-141105	N	11/5/2014	--	--	--	--	--	--	--	--	--	--	--	**0.39 J**	**25.8**	--	--
BDC-MW-22A	MW-22A-150429	N	4/29/2015	--	--	--	--	--	--	--	--	--	--	--	**2**	**14.8**	--	--
BDC-MW-22A	MW-22A-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	**2.6**	**16.7**	--	--
BDC-MW-22A	MW-22A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	**1.9 J**	**2980**	--	--
BDC-MW-22A	MW-22A-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**542**	--	--
BDC-MW-22A	MW-22A-170502	N	5/2/2017	--	--	--	--	--	--	--	--	--	--	--	0.3 U	**300**	--	--
BDC-MW-22A	MW-22A-171108	N	11/8/2017	--	--	--	--	--	--	--	--	--	--	--	15.0 U	**277**	--	--
BDC-MW-22A	MW-22A-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**297.2**	--	--
BDC-MW-22A	MW-22A-181105	N	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	0.100 U	**191.6**	--	--
BDC-MW-22A	MW-22A-190501	N	5/1/2019	--	--	--	--	--	--	--	--	--	--	--	**0.510**	**179.4**	--	--
BDC-MW-22A	MW-22A-191104	N	11/4/2019	--	--	--	--	--	--	--	--	--	--	--	**0.344**	**172.8**	--	--
BDC-MW-23A	MW-23A-050321	N	3/21/2005	--	--	--	--	--	--	--	--	--	--	--	**0.4**	**33**	--	--
BDC-MW-23A	MW-23A-050512	N	5/12/2005	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**39.9**	--	--
BDC-MW-23A	MW-23A-050822	N	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	**1.5 J**	**21 J**	--	--
BDC-MW-23A	MW-23A-DUP-050822	FD	8/22/2005	--	--	--	--	--	--	--	--	--	--	--	**2.1 J**	**83 J**	--	--
BDC-MW-23A	MW-23A-051116	N	11/16/2005	--	--	--	--	--	--	--	--	--	--	--	**4.1**	**30.8**	--	--
BDC-MW-23A	MW-23A-060222	N	2/22/2006	--	--	--	--	--	--	--	--	--	--	--	**91.8**	**34.5**	--	--
BDC-MW-23A	MW-23A-060517	N	5/17/2006	--	--	--	--	--	--	--	--	--	--	--	**38.8**	**30**	--	--
BDC-MW-23A	MW-23A-060815	N	8/15/2006	--	--	--	--	--	--	--	--	--	--	--	**63.9**	**32.6**	--	--
BDC-MW-23A	MW-23A-061130	N	11/30/2006	--	--	--	--	--	--	--	--	--	--	--	**40.7**	**45.2**	--	--
BDC-MW-23A	DC-MW23A-070222	N	2/22/2007	--	--	--	--	--	--	--	--	--	--	--	**2.9**	**34.6**	--	--
BDC-MW-23A	MW-23A-070523	N	5/23/2007	--	--	--	--	--	--	--	--	--	--	--	**52.7**	**38.7**	--	--
BDC-MW-23A	MW-23A-071130	N	11/30/2007	--	--	--	--	--	--	--	--	--	--	--	**81.1**	**38.6**	--	--
BDC-MW-23A	MW-23A-080521	N	5/21/2008	--	--	--	--	--	--	--	--	--	--	--	**31.7**	**29.6**	--	--
BDC-MW-23A	MW-23A-081125	N	11/25/2008	--	--	--	--	--	--	--	--	--	--	--	0.1 U	**39**	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement															
				Ammonia (NH3)	Conductivity	Dissolved Oxygen	FOG	HEM (oil & grease)	Nitrogen, Nitrate (as N)	Nitrogen, Nitrate&Nitrite (as N)	Nitrogen, Nitrite	Oil and Grease	Oxidation Reduction Potential	pH	Sulfate	Total Organic Carbon	Total Settleable Solids	Total Suspended Solids
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/L	µS/cm	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mV	S.U.	mg/L	mg/L	mL/L	mg/L
BDC-MW-23A	MW-23A-090519	N	5/19/2009	--	--	--	--	--	--	--	--	--	--	--	**0.1**	**39.1**	--	--
BDC-MW-23A	MW-23A-091118	N	11/18/2009	--	--	--	--	--	--	--	--	--	--	--	**1.6**	**30.9**	--	--
Sump Water	SUMP WATER-890601	N	6/1/1989	--	--	--	--	--	--	--	--	--	--	**7.17**	--	--	--	--

Table D-1
Groundwater General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
Bold text indicates detected analyte

Abbreviations/Acronyms:

-- = not analyzed
µg/L = micrograms per liter
µS/cm = microSiemens per centimeter
FD = field duplicate
FOG = fats, oil, and grease
HEM = hexane extractable material
ID = Identification
mg/L = milligrams per liter
mL/L = milliliters per liter
mV = millivolts
N = primary sample
N/A = not applicable
SU = standard units

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
AOC-5							
BDC-101	BDC-101-031119	N	11/19/2003	--	--	--	**240**
BDC-102	BDC-102-031119	N	11/19/2003	--	--	--	**1100**
BDC-103	BDC-103-031119	N	11/19/2003	--	--	--	**630**
SWMU-17							
BDC-05-02	BDC-05-02-081023	N	10/23/2008	1.1 U	1.2 U	1.1 U	**189**
BDC-05-02	BDC-05-02-081120	N	11/20/2008	1.1 U	1.2 U	1.1 U	**3250**
BDC-05-02	BDC-05-02-081216	N	12/16/2008	1.1 U	1.2 U	1.1 U	**2850**
BDC-05-02	BDC-05-02-090116	N	1/16/2009	1.1 U	1.2 U	1.1 U	**6180**
BDC-05-02	BDC-05-02-090211	N	2/11/2009	1.1 U	1.2 U	1.1 U	**13200**
BDC-05-02	BDC-05-02-090309	N	3/9/2009	1.1 U	1.2 U	1.1 U	**22900**
BDC-05-02	BDC-05-02-090416	N	4/16/2009	1.1 U	1.2 U	1.1 U	**26300**
BDC-05-02	BDC-05-02-090513	N	5/13/2009	--	1.2 U	1.1 U	**23000**
BDC-05-02	BDC-05-02-090816	N	8/16/2009	1.1 U	1.2 U	1.1 U	**22600**
BDC-05-02	BDC-05-02-091113	N	11/13/2009	1.1 U	1.2 U	1.1 U	**21100**
BDC-05-02	BDC-05-02-100216	N	2/16/2010	1.1 U	1.2 U	1.1 U	**22500**
BDC-05-02	BDC-05-02-100518	N	5/18/2010	1.1 U	1.2 U	1.1 U	**18400**
BDC-05-02	BDC-05-02-100817	N	8/17/2010	1.1 U	1.2 U	1.1 U	**20200**
BDC-05-02	BDC-05-02-101109	N	11/9/2010	1.1 U	1.2 U	1.1 U	**16900**
BDC-05-02	BDC-05-02-110215	N	2/15/2011	1.1 U	1.2 U	1.1 U	**17800**
BDC-05-02	BDC-05-02-110502	N	5/2/2011	1.1 U	1.2 U	1.1 U	**13300**
BDC-05-02	BDC-05-02-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**15000**
BDC-05-02	BDC-05-02-111102	N	11/2/2011	1.1 U	1.2 U	1.1 U	**9030**
BDC-05-02	BDC-05-02-120219	N	2/19/2012	1 U	1 U	1 U	**8500**
BDC-05-02	BDC-05-02-120507	N	5/7/2012	1 U	1 U	1 U	**19000**
BDC-05-02	BDC-05-02-120905	N	9/5/2012	1 U	1 U	1 U	**10000**
BDC-05-02	BDC-05-02-121115	N	11/15/2012	1 U	1 U	1 U	**20000**
BDC-05-02	BDC-05-02-130226	N	2/26/2013	5 U	5 U	5 U	**17000**
BDC-05-02	BDC-05-02-130522	N	5/22/2013	1 U	1 U	1 U	**15000**
BDC-05-02	BDC-05-02-130829	N	8/29/2013	1 U	1 U	1 U	**14000**
BDC-05-02	BDC-05-02-131113	N	11/13/2013	1 U	1 U	1 U	**14000**
BDC-05-02	BDC-05-02-DUP-131113	FD	11/13/2013	1 U	1 U	1 U	**14000**
BDC-05-02	BDC-05-02-140211	N	2/11/2014	1 U	3 U	1 U	**12000**
BDC-05-02	BDC-05-02-140513	N	5/13/2014	1 U	1 U	**5.1**	**15000**
BDC-05-02	BDC-05-02-140806	N	8/6/2014	1 U	**11**	**40**	**17000**
BDC-05-02	BDC-05-02-141111	N	11/11/2014	1 U	**12**	1 U	**13000**
BDC-05-02	BDC-05-02-150121	N	1/21/2015	1 U	**4.7 J**	1 U	**12000**
BDC-05-02	BDC-05-02-150427	N	4/27/2015	1 U	**6.4**	**3 J**	**9800**
BDC-05-02	BDC-05-02-DUP-150427	FD	4/27/2015	1 U	**6.2**	**3 J**	**11000**
BDC-05-02	BDC-05-02-150720	N	7/20/2015	1 U	**11**	1 U	**8000**
BDC-05-02	BDC-05-02-151028	N	10/28/2015	1 U	1 U	1 U	**9200**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-160126	N	1/26/2016	1 U	**5.5**	**2.1 J**	**10000**
BDC-05-02	BDC-05-02-160420	N	4/20/2016	1 U	**4.4 J**	1 U	**8800**
BDC-05-02	BDC-05-02-160809	N	8/9/2016	1.0 U	**4.9 J**	1.0 U	**12000**
BDC-05-02	BDC-05-02-161102	N	11/2/2016	1 U	1 U	1 U	**10000**
BDC-05-02	BDC-05-02-170207	N	2/7/2017	1 U	**5.4**	**1.2 J**	**9600**
BDC-05-02	BDC-05-02-170504	N	5/4/2017	1 U	**3.6 J**	1 U	**5000**
BDC-05-02	BDC-05-02-170801	N	8/1/2017	1.0 U	**8.2**	1.0 U	**8000**
BDC-05-02	BDC-05-02-171106	N	11/6/2017	1.0 U	**3.5 J**	1.0 U	**10000**
BDC-05-02	BDC-05-02-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**10200**
BDC-05-02	BDC-05-02-181106	N	11/6/2018	1.06 UJ	1.23 UJ	1.14 UJ	**9270 J**
BDC-05-02	BDC-05-02-190503	N	5/3/2019	1.06 U	1.23 U	1.14 U	**15700**
BDC-05-02	BDC-05-02-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**4350**
BDC-05-03	BDC-05-03-081023	N	10/23/2008	1.1 U	1.2 U	1.1 U	**2100**
BDC-05-03	BDC-05-03-081120	N	11/20/2008	1.1 U	1.2 U	1.1 U	**3640**
BDC-05-03	BDC-05-03-081216	N	12/16/2008	1.1 U	1.2 U	1.1 U	**4680**
BDC-05-03	BDC-05-03-090116	N	1/16/2009	1.1 U	1.2 U	1.1 U	**1540 J**
BDC-05-03	BDC-05-03-090211	N	2/11/2009	1.1 U	1.2 U	1.1 U	**5420**
BDC-05-03	BDC-05-03-090309	N	3/9/2009	1.1 U	1.2 U	1.1 U	**4310**
BDC-05-03	BDC-05-03-090416	N	4/16/2009	1.1 U	1.2 U	1.1 U	**3250**
BDC-05-03	BDC-05-03-090513	N	5/13/2009	--	1.2 U	1.1 U	**6890**
BDC-05-03	BDC-05-03-090816	N	8/16/2009	1.1 U	1.2 U	1.1 U	**8320**
BDC-05-03	BDC-05-03-091113	N	11/13/2009	1.1 U	1.2 U	1.1 U	**4960**
BDC-05-03	BDC-05-03-100216	N	2/16/2010	1.1 U	1.2 U	1.1 U	0.7 U
BDC-05-03	BDC-05-03-100518	N	5/18/2010	1.1 U	1.2 U	1.1 U	**2440**
BDC-05-03	BDC-05-03-100817	N	8/17/2010	1.1 U	1.2 U	1.1 U	**7120**
BDC-05-03	BDC-05-03-101109	N	11/9/2010	1.1 U	1.2 U	1.1 U	**2960**
BDC-05-03	BDC-05-03-110215	N	2/15/2011	1.1 U	1.2 U	1.1 U	**4600**
BDC-05-03	BDC-05-03-110502	N	5/2/2011	1.1 U	1.2 U	1.1 U	**294**
BDC-05-03	BDC-05-03-131113	N	11/13/2013	1 U	1 U	1 U	**450**
BDC-05-03	BDC-05-03-140513	N	5/13/2014	1 U	**1.1 J**	1 U	**1000**
BDC-05-03	BDC-05-03-DUP-140513	FD	5/13/2014	1 U	**1.4 J**	1 U	**1200**
BDC-05-03	BDC-05-03-141110	N	11/10/2014	1 U	1 U	1 U	**66**
BDC-05-03	BDC-05-03-150427	N	4/27/2015	1 U	1 U	1 U	**740**
BDC-05-03	BDC-05-03-151028	N	10/28/2015	1 U	**1.1 J**	1 U	**5900**
BDC-05-03	BDC-05-03-160420	N	4/20/2016	1 U	1 U	1 U	**2800**
BDC-05-03	BDC-05-03-161103	N	11/3/2016	1 U	1 U	1 U	**310**
BDC-05-03	BDC-05-03-170504	N	5/4/2017	1 U	1 U	1 U	3 U
BDC-05-03	BDC-05-03-171106	N	11/6/2017	1.0 U	**3.4 J**	1.0 U	**10000**
BDC-05-03	BDC-05-03-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**9070**
BDC-05-03	BDC-05-03-181106	N	11/6/2018	1.06 UJ	1.23 UJ	1.14 UJ	**10500 J**
BDC-05-03	BDC-05-03-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**10100**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-191106	N	11/6/2019	1.06 UJ	1.23 UJ	1.14 UJ	**10600 J**
BDC-05-04	BDC-05-04-081023	N	10/23/2008	1.1 U	1.2 U	1.1 U	**292**
BDC-05-04	BDC-05-04-081120	N	11/20/2008	1.1 U	1.2 U	1.1 U	**45.7**
BDC-05-04	BDC-05-04-081216	N	12/16/2008	1.1 U	1.2 U	1.1 U	**1610**
BDC-05-04	BDC-05-04-090116	N	1/16/2009	1.1 U	1.2 U	1.1 U	**1480**
BDC-05-04	BDC-05-04-090211	N	2/11/2009	1.1 U	1.2 U	1.1 U	**1060**
BDC-05-04	BDC-05-04-090309	N	3/9/2009	1.1 U	1.2 U	1.1 U	**196**
BDC-05-04	BDC-05-04-090416	N	4/16/2009	1.1 U	1.2 U	1.1 U	0.7 U
BDC-05-04	BDC-05-04-090513	N	5/13/2009	--	1.2 U	1.1 U	**371**
BDC-05-04	BDC-05-04-090816	N	8/16/2009	1.1 U	1.2 U	1.1 U	0.7 U
BDC-05-04	BDC-05-04-091113	N	11/13/2009	1.1 U	1.2 U	1.1 U	**2440**
BDC-05-04	BDC-05-04-100216	N	2/16/2010	1.1 U	1.2 U	1.1 U	**1490**
BDC-05-04	BDC-05-04-100518	N	5/18/2010	1.1 U	1.2 U	1.1 U	**1320**
BDC-05-04	BDC-05-04-100817	N	8/17/2010	1.1 U	1.2 U	1.1 U	**3530**
BDC-05-04	BDC-05-04-101109	N	11/9/2010	1.1 UJ	1.2 UJ	1.1 UJ	**3000 J**
BDC-05-04	BDC-05-04-110215	N	2/15/2011	1.1 U	1.2 U	1.1 U	**4460**
BDC-05-04	BDC-05-04-110502	N	5/2/2011	1.1 U	1.2 U	1.1 U	**1750**
BDC-05-04	BDC-05-04-171106	N	11/6/2017	1.0 U	1.0 U	1.0 U	**5900**
BDC-05-04	BDC-05-04-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**14000**
BDC-05-04	BDC-05-04-181107	N	11/7/2018	1.06 U	1.23 U	1.14 U	**13200**
BDC-05-04	BDC-05-04-190503	N	5/3/2019	1.06 U	1.23 U	1.14 U	**13300**
BDC-05-04	BDC-05-04-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**8160**
BDC-05-05	BDC-05-05-031119	N	11/19/2003	--	--	--	**14**
BDC-05-05	BDC-05-05-121116	N	11/16/2012	1 U	1 U	1 U	3 U
BDC-05-07	BDC-05-07-081023	N	10/23/2008	1.1 U	1.2 U	1.1 U	**624**
BDC-05-07	BDC-05-07-081120	N	11/20/2008	1.1 U	1.2 U	1.1 U	**161**
BDC-05-07	BDC-05-07-081216	N	12/16/2008	1.1 U	1.2 U	1.1 U	**643**
BDC-05-07	BDC-05-07-090116	N	1/16/2009	1.1 U	1.2 U	1.1 U	**33.5**
BDC-05-07	BDC-05-07-090211	N	2/11/2009	1.1 U	1.2 U	1.1 U	**1520**
BDC-05-07	BDC-05-07-090309	N	3/9/2009	1.1 U	1.2 U	1.1 U	**5520**
BDC-05-07	BDC-05-07-090416	N	4/16/2009	1.1 U	1.2 U	1.1 U	**5100**
BDC-05-07	BDC-05-07-090513	N	5/13/2009	--	1.2 U	1.1 U	**7910**
BDC-05-07	BDC-05-07-090816	N	8/16/2009	1.1 U	1.2 U	1.1 U	**6830**
BDC-05-07	BDC-05-07-091113	N	11/13/2009	1.1 U	1.2 U	1.1 U	**4730**
BDC-05-07	BDC-05-07-100216	N	2/16/2010	1.1 U	1.2 U	1.1 U	**5150**
BDC-05-07	BDC-05-07-100518	N	5/18/2010	1.1 U	1.2 U	1.1 U	**6020**
BDC-05-07	BDC-05-07-100817	N	8/17/2010	1.1 U	1.2 U	1.1 U	**7080**
BDC-05-07	BDC-05-07-101109	N	11/9/2010	1.1 U	1.2 U	1.1 U	**5080**
BDC-05-07	BDC-05-07-110215	N	2/15/2011	1.1 U	1.2 U	1.1 U	**5090**
BDC-05-07	BDC-05-07-110502	N	5/2/2011	1.1 U	1.2 U	1.1 U	**3150**
BDC-05-07	BDC-05-07-111102	N	11/2/2011	1.1 U	1.2 U	1.1 U	**16100**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-120507	N	5/7/2012	1 U	1 U	1 U	**27000**
BDC-05-07	BDC-05-07-121115	N	11/15/2012	1 U	1 U	1 U	**23000**
BDC-05-07	BDC-05-07-130522	N	5/22/2013	1 U	1 U	1 U	**11000**
BDC-05-07	BDC-05-07-131113	N	11/13/2013	1 U	**1.3 J**	1 U	**8500**
BDC-05-07	BDC-05-07-140513	N	5/13/2014	1 U	1 U	1 U	**3700**
BDC-05-07	BDC-05-07-141111	N	11/11/2014	1 U	**3 J**	**26**	**14000**
BDC-05-07	BDC-05-07-150427	N	4/27/2015	1 U	1 U	**1.6 J**	**3500**
BDC-05-07	BDC-05-07-151028	N	10/28/2015	1 U	**1.2 J**	**1.8 J**	**3700**
BDC-05-07	BDC-05-07-160420	N	4/20/2016	1 U	1 U	**1.3 J**	**5400**
BDC-05-07	BDC-05-07-161102	N	11/2/2016	1 U	**1.6 J**	1 U	**8400**
BDC-05-07	BDC-05-07-170504	N	5/4/2017	1 U	1 U	1 U	**3100**
BDC-05-07	BDC-05-07-171106	N	11/6/2017	1.0 U	**1.9 J**	1.0 U	**6900**
BDC-05-07	BDC-05-07-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**16100**
BDC-05-07	BDC-05-07-181106	N	11/6/2018	1.06 U	1.23 U	1.14 U	**16300**
BDC-05-07	BDC-05-07-190503	N	5/3/2019	1.06 U	1.23 U	1.14 U	**21700**
BDC-05-07	BDC-05-07-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**12200**
BDC-05-08	BDC-05-08-081023	N	10/23/2008	1.1 U	1.2 U	1.1 U	**4650**
BDC-05-08	BDC-05-08-081120	N	11/20/2008	1.1 U	1.2 U	1.1 U	**5530**
BDC-05-08	BDC-05-08-081216	N	12/16/2008	1.1 U	1.2 U	1.1 U	**3590**
BDC-05-08	BDC-05-08-090116	N	1/16/2009	1.1 U	1.2 U	1.1 U	**6930**
BDC-05-08	BDC-05-08-090211	N	2/11/2009	1.1 U	1.2 U	1.1 U	**4410**
BDC-05-08	BDC-05-08-090309	N	3/9/2009	1.1 U	1.2 U	1.1 U	**4940**
BDC-05-08	BDC-05-08-090416	N	4/16/2009	1.1 U	1.2 U	1.1 U	**6720**
BDC-05-08	BDC-05-08-090513	N	5/13/2009	--	1.2 U	1.1 U	**11400**
BDC-05-08	BDC-05-08-090816	N	8/16/2009	1.1 U	1.2 U	1.1 U	**13200**
BDC-05-08	BDC-05-08-091113	N	11/13/2009	1.1 U	1.2 U	1.1 U	**17400**
BDC-05-08	BDC-05-08-100216	N	2/16/2010	1.1 U	1.2 U	1.1 U	**13100**
BDC-05-08	BDC-05-08-100518	N	5/18/2010	1.1 U	1.2 U	1.1 U	**14900**
BDC-05-08	BDC-05-08-100817	N	8/17/2010	1.1 U	1.2 U	1.1 U	**10100**
BDC-05-08	BDC-05-08-101109	N	11/9/2010	1.1 U	1.2 U	1.1 U	**14200**
BDC-05-08	BDC-05-08-110215	N	2/15/2011	1.1 U	1.2 U	1.1 U	**14100**
BDC-05-08	BDC-05-08-110502	N	5/2/2011	1.1 U	1.2 U	1.1 U	**7830**
BDC-05-08	BDC-05-08-140513	N	5/13/2014	1 U	1 U	1 U	**7700**
BDC-05-09	BDC-05-09-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**1390**
BDC-05-09	BDC-05-09-111102	N	11/2/2011	1.1 U	1.2 U	1.1 U	**4310**
BDC-05-09	BDC-05-09-120507	N	5/7/2012	1 U	1 U	1 U	**18000**
BDC-05-09	BDC-05-09-121115	N	11/15/2012	1 U	1 U	**69**	**27000**
BDC-05-09	BDC-05-09-130522	N	5/22/2013	1 U	**3.4 J**	**23**	**17000**
BDC-05-09	BDC-05-09-131113	N	11/13/2013	1 U	**8.3**	**8.6**	**11000**
BDC-05-09	BDC-05-09-140513	N	5/13/2014	1 U	**8.5**	**1.6 J**	**8000**
BDC-05-09	BDC-05-09-141111	N	11/11/2014	1 U	**6.4**	**1.2 J**	**8500**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-09	BDC-05-09-150427	N	4/27/2015	1 U	**4.3 J**	**5**	**7500**
BDC-05-09	BDC-05-09-151028	N	10/28/2015	1 U	**2 J**	1 U	**5300**
BDC-05-09	BDC-05-09-DUP-151028	FD	10/28/2015	1 U	**1.8 J**	1 U	**5200**
BDC-05-09	BDC-05-09-160420	N	4/20/2016	1 U	**8.4**	**1.9 J**	**6600**
BDC-05-09	BDC-05-09-161102	N	11/2/2016	1 U	**9.2**	**1 J**	**7600**
BDC-05-09	BDC-05-09-170504	N	5/4/2017	1 U	**9**	**1 J**	**5300**
BDC-05-09	BDC-05-09-171106	N	11/6/2017	1.0 U	**8.7**	1.0 U	**4400**
BDC-05-09	BDC-05-09-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**15300**
BDC-05-09	BDC-05-09-181106	N	11/6/2018	1.06 U	**3.91**	1.14 U	**15600**
BDC-05-09	BDC-05-09-190502	N	5/2/2019	1.06 U	**4.35**	1.14 U	**8630**
BDC-05-09	BDC-05-09-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**7450**
BDC-05-10	BDC-05-10-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**254**
BDC-05-10	BDC-05-10-111102	N	11/2/2011	1.1 U	**1.7**	**1.6**	**125**
BDC-05-10	BDC-05-10-120506	N	5/6/2012	1 U	1 U	**1.1 J**	**19000**
BDC-05-10	BDC-05-10-DUP-120506	FD	5/6/2012	1 U	1 U	**1.1 J**	**18000**
BDC-05-10	BDC-05-10-121115	N	11/15/2012	1 U	1 U	**8.5**	**24000**
BDC-05-10	BDC-05-10-130522	N	5/22/2013	1 U	3 U	**14**	**20000**
BDC-05-10	BDC-05-10-131113	N	11/13/2013	1 U	1 U	**17**	**23000**
BDC-05-10	BDC-05-10-140513	N	5/13/2014	1 U	1 U	**29**	**21000**
BDC-05-10	BDC-05-10-141110	N	11/10/2014	1 U	1 U	**3.4 J**	**16000**
BDC-05-10	BDC-05-10-DUP-141110	FD	11/10/2014	1 U	1 U	**3.5 J**	**16000**
BDC-05-10	BDC-05-10-150427	N	4/27/2015	1 U	**8.3**	**7.2**	**14000**
BDC-05-10	BDC-05-10-151028	N	10/28/2015	1 U	**3.2 J**	1 U	**7400**
BDC-05-10	BDC-05-10-160420	N	4/20/2016	1 U	**11**	**3.9 J**	**5800**
BDC-05-10	BDC-05-10-161102	N	11/2/2016	1 U	**19**	1 U	**6100**
BDC-05-10	BDC-05-10-170504	N	5/4/2017	1 U	**15**	**1 J**	**4000**
BDC-05-10	BDC-05-10-171106	N	11/6/2017	1.0 U	**12**	1.0 U	**6200**
BDC-05-10	BDC-05-10-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**13800**
BDC-05-10	BDC-05-10-181106	N	11/6/2018	1.06 U	1.23 U	1.14 U	**18400**
BDC-05-10	BDC-05-10-190502	N	5/2/2019	1.06 U	**2.68**	1.14 U	**19300**
BDC-05-10	BDC-05-10-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**6680**
BDC-05-11	BDC-05-11-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**1360**
BDC-05-11	BDC-05-11-111102	N	11/2/2011	1.1 U	1.2 U	1.1 U	**954**
BDC-05-11	BDC-05-11-120506	N	5/6/2012	1 U	1 U	**1.6 J**	**18000**
BDC-05-11	BDC-05-11-121115	N	11/15/2012	1 U	1 U	**7.6**	**26000**
BDC-05-11	BDC-05-11-130522	N	5/22/2013	1 U	**3.7 J**	**16**	**23000**
BDC-05-11	BDC-05-11-131113	N	11/13/2013	1 U	**4.6 J**	**17**	**24000**
BDC-05-11	BDC-05-11-140513	N	5/13/2014	1 U	**7.2**	**9**	**24000**
BDC-05-11	BDC-05-11-141110	N	11/10/2014	1 U	**1.9 J**	**1.7 J**	**8000**
BDC-05-11	BDC-05-11-150427	N	4/27/2015	1 U	1 U	**2.1 J**	**6200**
BDC-05-11	BDC-05-11-151028	N	10/28/2015	1 U	**2.1 J**	**1.8 J**	**15000**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-11	BDC-05-11-160420	N	4/20/2016	1 U	**2.6 J**	**3.3 J**	**13000**
BDC-05-11	BDC-05-11-161102	N	11/2/2016	1 U	**5.8**	**1.8 J**	**13000**
BDC-05-11	BDC-05-11-170504	N	5/4/2017	1 U	**6.8**	**2.5 J**	**9000**
BDC-05-11	BDC-05-11-171106	N	11/6/2017	1.0 U	**5.1**	1.0 U	**10000**
BDC-05-11	BDC-05-11-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**14800**
BDC-05-11	BDC-05-11-181107	N	11/7/2018	1.06 U	**1.35**	1.14 U	**20700**
BDC-05-11	BDC-05-11-190502	N	5/2/2019	1.06 U	**2.02**	1.14 U	**18900**
BDC-05-11	BDC-05-11-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**16400**
BDC-05-12	BDC-05-12-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**4000**
BDC-05-12	BDC-05-12-111102	N	11/2/2011	1.1 U	1.2 U	1.1 U	**1010**
BDC-05-12	BDC-05-12-120219	N	2/19/2012	1 U	1 U	1 U	**17000**
BDC-05-12	BDC-05-12-120506	N	5/6/2012	1 U	1 U	1 U	**21000**
BDC-05-12	BDC-05-12-120905	N	9/5/2012	1 U	1 U	**1 J**	**22000**
BDC-05-12	BDC-05-12-121115	N	11/15/2012	1 U	1 U	**1.1 J**	**27000**
BDC-05-12	BDC-05-12-130225	N	2/25/2013	5 U	5 U	5 U	**26000**
BDC-05-12	BDC-05-12-130522	N	5/22/2013	1 U	3 U	**12**	**24000**
BDC-05-12	BDC-05-12-130829	N	8/29/2013	1 U	**2.8 J**	**5.5**	**22000**
BDC-05-12	BDC-05-12-131113	N	11/13/2013	1 U	**3.4 J**	**2.2 J**	**26000**
BDC-05-12	BDC-05-12-140211	N	2/11/2014	1 U	6 U	**1.1 J**	**23000**
BDC-05-12	BDC-05-12-140513	N	5/13/2014	1 U	**5.6**	**1 J**	**25000**
BDC-05-12	BDC-05-12-140806	N	8/6/2014	1 U	**4.5 J**	**1.8 J**	**21000**
BDC-05-12	BDC-05-12-141110	N	11/10/2014	1 U	**8.9**	**2.5 J**	**25000**
BDC-05-12	BDC-05-12-150121	N	1/21/2015	1 U	**5**	**1.5 J**	**17000**
BDC-05-12	BDC-05-12-150427	N	4/27/2015	1 U	**2.2 J**	**1.2 J**	**21000**
BDC-05-12	BDC-05-12-150721	N	7/21/2015	1 U	**3.1 J**	1 U	**18000**
BDC-05-12	BDC-05-12-DUP-150721	FD	7/21/2015	1 U	**3.1 J**	1 U	**18000**
BDC-05-12	BDC-05-12-151028	N	10/28/2015	1 U	**2.6 J**	1 U	**14000**
BDC-05-12	BDC-05-12-160126	N	1/26/2016	1 U	**4.3 J**	**1.3 J**	**19000**
BDC-05-12	BDC-05-12-160420	N	4/20/2016	1 U	**4.3 J**	1 U	**16000**
BDC-05-12	BDC-05-12-160809	N	8/9/2016	1.0 U	**2.7 J**	1.0 U	**13000**
BDC-05-12	BDC-05-12-161103	N	11/3/2016	1 U	**2.8 J**	1 U	**12000**
BDC-05-12	BDC-05-12-170208	N	2/8/2017	1 U	**1.9 J**	1 U	**12000**
BDC-05-12	BDC-05-12-170504	N	5/4/2017	1 U	**2.4 J**	1 U	**11000**
BDC-05-12	BDC-05-12-170801	N	8/1/2017	1.0 U	**8.0**	1.0 U	**9500**
BDC-05-12	BDC-05-12-171106	N	11/6/2017	1.0 U	**1.6 J**	1.0 U	**12000**
BDC-05-12	BDC-DUP3-180502	FD	5/2/2018	1.06 U	1.23 U	1.14 U	**13200**
BDC-05-12	BDC-05-12-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**14200**
BDC-05-12	BDC-DUP3-181106	FD	11/6/2018	1.06 U	1.23 U	1.14 U	**17300 J**
BDC-05-12	BDC-05-12-181106	N	11/6/2018	1.06 U	1.23 U	1.14 U	**24500 J**
BDC-05-12	BDC-05-12-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**20700**
BDC-05-12	BDC-DUP3-190502	FD	5/2/2019	1.06 U	1.23 U	1.14 U	**22100**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
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				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-12	BDC-05-12-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**17400**
BDC-05-12	BDC-DUP3-191106	FD	11/6/2019	1.06 U	1.23 U	1.14 U	**17300**
BDC-05-13	BDC-05-13-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**5010**
BDC-05-13	BDC-05-13-111101	N	11/1/2011	1.1 U	1.2 U	1.1 U	**2150**
BDC-05-13	BDC-05-13-120506	N	5/6/2012	1 U	1 U	**1.7 J**	**19000**
BDC-05-13	BDC-05-13-121115	N	11/15/2012	1 U	1 U	**3.7 J**	**22000**
BDC-05-13	BDC-05-13-130522	N	5/22/2013	1 U	**3.9 J**	**3.8 J**	**23000**
BDC-05-13	BDC-05-13-131113	N	11/13/2013	1 U	**6.4**	**3.6 J**	**19000**
BDC-05-13	BDC-05-13-140512	N	5/12/2014	1 U	**6.8**	**4.3 J**	**19000**
BDC-05-13	BDC-05-13-141110	N	11/10/2014	1 U	**2.2 J**	**2.1 J**	**7100**
BDC-05-13	BDC-05-13-150427	N	4/27/2015	1 U	**1.6 J**	**2.5 J**	**12000**
BDC-05-13	BDC-05-13-151028	N	10/28/2015	1 U	**1 J**	1 U	**6100**
BDC-05-13	BDC-05-13-160420	N	4/20/2016	1 U	**2 J**	**1.9 J**	**10000**
BDC-05-13	BDC-05-13-161103	N	11/3/2016	1 U	**2.3 J**	1 U	**15000**
BDC-05-13	BDC-05-13-170504	N	5/4/2017	1 U	**12**	**1.4 J**	**14000**
BDC-05-13	BDC-05-13-171106	N	11/6/2017	1.0 U	**7.0**	1.0 U	**14000**
BDC-05-13	BDC-05-13-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**16000**
BDC-05-13	BDC-05-13-181106	N	11/6/2018	1.06 U	**3.82**	1.14 U	**14700**
BDC-05-13	BDC-05-13-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**19600**
BDC-05-13	BDC-05-13-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**9980**
BDC-05-14	BDC-05-14-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**6490**
BDC-05-14	BDC-05-14-111101	N	11/1/2011	1.1 U	1.2 U	1.1 U	**3950**
BDC-05-14	BDC-05-14-120506	N	5/6/2012	1 U	1 U	1 U	**23000**
BDC-05-14	BDC-05-14-121115	N	11/15/2012	1 U	1 U	**1.4 J**	**24000**
BDC-05-14	BDC-05-14-130522	N	5/22/2013	1 U	3 U	**1.3 J**	**26000**
BDC-05-14	BDC-05-14-131113	N	11/13/2013	1 U	**2.5 J**	**1.3 J**	**24000**
BDC-05-14	BDC-05-14-140512	N	5/12/2014	1 U	**5 J**	**2.2 J**	**22000**
BDC-05-14	BDC-05-14-141110	N	11/10/2014	1 U	**6.4**	**4.3 J**	**19000**
BDC-05-14	BDC-05-14-150427	N	4/27/2015	1 U	**1.1 J**	1 U	**11000**
BDC-05-14	BDC-05-14-151028	N	10/28/2015	1 U	**2.4 J**	**1.1 J**	**12000**
BDC-05-14	BDC-05-14-160420	N	4/20/2016	1 U	**1.7 J**	1 U	**11000**
BDC-05-14	BDC-05-14-161103	N	11/3/2016	1 U	1 U	1 U	**17000**
BDC-05-14	BDC-05-14-170504	N	5/4/2017	1 U	**8.9**	2 U	**12000**
BDC-05-14	BDC-05-14-171106	N	11/6/2017	1.0 U	**3.6 J**	1.0 U	**14000**
BDC-05-14	BDC-05-14-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**10100**
BDC-05-14	BDC-05-14-181106	N	11/6/2018	1.06 U	1.23 U	1.14 U	**23800**
BDC-05-14	BDC-05-14-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**20300**
BDC-05-14	BDC-05-14-191105	N	11/5/2019	1.06 U	1.23 U	1.14 U	**14600**
BDC-05-15	BDC-05-15-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**845**
BDC-05-15	BDC-05-15-111102	N	11/2/2011	1.1 U	1.2 U	1.1 U	**3460**
BDC-05-15	BDC-05-15-120506	N	5/6/2012	1 U	1 U	1 U	**21000**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-15	BDC-05-15-121115	N	11/15/2012	1 U	1 U	**1.8 J**	**27000**
BDC-05-15	BDC-05-15-130522	N	5/22/2013	1 U	3 U	**11**	**25000**
BDC-05-15	BDC-05-15-131113	N	11/13/2013	1 U	**2.5 J**	**7.2**	**23000**
BDC-05-15	BDC-05-15-140513	N	5/13/2014	1 U	1 U	**9.4**	**26000**
BDC-05-15	BDC-05-15-141110	N	11/10/2014	1 U	**8.6**	**4.6 J**	**25000**
BDC-05-15	BDC-05-15-150427	N	4/27/2015	1 U	**5.1**	**3.2 J**	**18000**
BDC-05-15	BDC-05-15-151028	N	10/28/2015	1 U	**6**	**1.2 J**	**17000**
BDC-05-15	BDC-05-15-160420	N	4/20/2016	1 U	**12**	1 U	**18000**
BDC-05-15	BDC-05-15-161103	N	11/3/2016	1 U	**9.4**	1 U	**15000**
BDC-05-15	BDC-05-15-170504	N	5/4/2017	1 U	**17**	1 U	**10000**
BDC-05-15	BDC-05-15-171107	N	11/7/2017	1.0 U	**11**	1.0 U	**8700**
BDC-05-15	BDC-05-15-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**11300**
BDC-05-15	BDC-05-15-181107	N	11/7/2018	1.06 U	1.23 U	1.14 U	**19300**
BDC-05-15	BDC-05-15-190503	N	5/3/2019	1.06 U	1.23 U	1.14 U	**26000**
BDC-05-15	BDC-05-15-191106	N	11/6/2019	1.06 UJ	1.23 UJ	1.14 UJ	**19400 J**
BDC-05-16	BDC-05-16-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**3080**
BDC-05-16	BDC-05-16-111101	N	11/1/2011	1.1 U	1.2 U	1.1 U	**3060**
BDC-05-16	BDC-05-16-120219	N	2/19/2012	1 U	1 U	1 U	**18000**
BDC-05-16	BDC-05-16-120506	N	5/6/2012	1 U	1 U	**2.5 J**	**25000**
BDC-05-16	BDC-05-16-120905	N	9/5/2012	1 U	1 U	**6 J**	**22000**
BDC-05-16	BDC-05-16-DUP-120905	FD	9/5/2012	1 U	1 U	**4.9 J**	**22000**
BDC-05-16	BDC-05-16-121115	N	11/15/2012	1 U	1 U	**4 J**	**28000**
BDC-05-16	BDC-05-16-130225	N	2/25/2013	5 U	5 U	5 U	**28000**
BDC-05-16	BDC-05-16-DUP-130225	FD	2/25/2013	5 U	5 U	**5.2**	**27000**
BDC-05-16	BDC-05-16-130522	N	5/22/2013	1 U	3 U	**3.9 J**	**26000**
BDC-05-16	BDC-05-16-130828	N	8/28/2013	1 U	3 U	**4.2 J**	**26000**
BDC-05-16	BDC-05-16-131113	N	11/13/2013	1 U	1 U	**3.2 J**	**24000**
BDC-05-16	BDC-05-16-140211	N	2/11/2014	1 U	7 U	**2 J**	**25000**
BDC-05-16	BDC-0516-DUP-140211	FD	2/11/2014	1 U	7 U	**1.9 J**	**22000**
BDC-05-16	BDC-05-16-140512	N	5/12/2014	1 U	1 U	**4.9 J**	**28000**
BDC-05-16	BDC-05-16-140806	N	8/6/2014	1 U	1 U	**1.9 J**	**23000**
BDC-05-16	BDC-05-16-141111	N	11/11/2014	1 U	**5.4**	**3.9 J**	**26000**
BDC-05-16	BDC-05-16-150121	N	1/21/2015	1 U	**6.1**	**5.7**	**21000**
BDC-05-16	BDC-05-16-150426	N	4/26/2015	1 U	**5.7**	**2.4 J**	**22000**
BDC-05-16	BDC-05-16-150721	N	7/21/2015	1 U	**6.3**	**1.4 J**	**22000**
BDC-05-16	BDC-05-16-151027	N	10/27/2015	1 U	**5.5**	**1 J**	**19000**
BDC-05-16	BDC-05-16-160126	N	1/26/2016	1 U	**8**	1 U	**21000**
BDC-05-16	BDC-05-16-160420	N	4/20/2016	1 U	**9**	**1.4 J**	**17000**
BDC-05-16	BDC-05-16-160809	N	8/9/2016	1.0 U	**12**	**1.0 J**	**15000**
BDC-05-16	BDC-05-16-161103	N	11/3/2016	1 U	**6.9**	1 U	**13000**
BDC-05-16	BDC-05-16-170208	N	2/8/2017	1 U	**6.7**	1 U	**10000**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-16	BDC-05-16-170504	N	5/4/2017	1 U	**12**	**1.6 J**	**9100**
BDC-05-16	BDC-05-16-170801	N	8/1/2017	1.0 U	**9.9**	1.0 U	**7400**
BDC-05-16	BDC-05-16-171107	N	11/7/2017	1.0 U	**4.0 J**	1.0 U	**9500**
BDC-05-16	BDC-05-16-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**12200**
BDC-05-16	BDC-05-16-181106	N	11/6/2018	1.06 U	1.23 U	1.14 U	**16700**
BDC-05-16	BDC-05-16-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**22600**
BDC-05-16	BDC-05-16-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**19900**
BDC-05-17	BDC-05-17-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**295**
BDC-05-17	BDC-05-17-111101	N	11/1/2011	1.1 U	1.2 U	1.1 U	**2800**
BDC-05-17	BDC-05-17-120506	N	5/6/2012	1 U	1 U	1 U	**15000**
BDC-05-17	BDC-05-17-121115	N	11/15/2012	1 U	1 U	**2 J**	**23000**
BDC-05-17	BDC-05-17-130523	N	5/23/2013	1 U	3 U	**4.3 J**	**26000**
BDC-05-17	BDC-05-17-131113	N	11/13/2013	1 U	**2.2 J**	**3 J**	**26000**
BDC-05-17	BDC-05-17-140512	N	5/12/2014	1 U	**6**	**2.5 J**	**25000**
BDC-05-17	BDC-05-17-141111	N	11/11/2014	1 U	**5.9**	**3.9 J**	**26000**
BDC-05-17	BDC-05-17-DUP-141111	FD	11/11/2014	1 U	**6**	**3.9 J**	**26000**
BDC-05-17	BDC-05-17-150426	N	4/26/2015	1 U	**3 J**	**2.7 J**	**21000**
BDC-05-17	BDC-05-17-151027	N	10/27/2015	1 U	**4.5 J**	**1 J**	**21000**
BDC-05-17	BDC-05-17-160420	N	4/20/2016	1 U	**6.6**	**1.1 J**	**19000**
BDC-05-17	BDC-05-17-161103	N	11/3/2016	1 U	**7.6**	1 U	**19000**
BDC-05-17	BDC-05-17-170504	N	5/4/2017	1 U	**13**	2 U	**11000**
BDC-05-17	BDC-05-17-171107	N	11/7/2017	1.0 U	**7.6**	1.0 U	**11000**
BDC-05-17	BDC-05-17-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**10000**
BDC-05-17	BDC-05-17-181106	N	11/6/2018	1.06 U	**2.09**	1.14 U	**13600**
BDC-05-17	BDC-05-17-190502	N	5/2/2019	1.06 U	**1.26**	1.14 U	**16700**
BDC-05-17	BDC-05-17-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**16200**
BDC-05-18	BDC-05-18-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**3930**
BDC-05-18	BDC-05-18-111102	N	11/2/2011	1.1 U	1.2 U	1.1 U	**4300**
BDC-05-18	BDC-05-18-120219	N	2/19/2012	1 U	1 U	1 U	**11000**
BDC-05-18	BDC-05-18-120506	N	5/6/2012	1 U	1 U	1 U	**7500**
BDC-05-18	BDC-05-18-120905	N	9/5/2012	1 U	1 U	1 U	**7900**
BDC-05-18	BDC-05-18-121115	N	11/15/2012	1 U	1 U	1 U	**8300**
BDC-05-18	BDC-05-18-130225	N	2/25/2013	5 U	5 U	5 U	**1300**
BDC-05-18	BDC-05-18-130523	N	5/23/2013	1 U	1 U	1 U	**1000**
BDC-05-18	BDC-05-18-130828	N	8/28/2013	1 U	1 U	1 U	**1500**
BDC-05-18	BDC-05-18-131114	N	11/14/2013	1 U	1 U	1 U	**680**
BDC-05-18	BDC-05-18-140212	N	2/12/2014	1 U	1 U	1 U	**3700**
BDC-05-18	BDC-05-18-140513	N	5/13/2014	1 U	1 U	1 U	**3200**
BDC-05-18	BDC-05-18-140806	N	8/6/2014	1 U	1 U	1 U	**12**
BDC-05-18	BDC-05-18-141110	N	11/10/2014	1 U	1 U	1 U	**58**
BDC-05-18	BDC-05-18-150121	N	1/21/2015	1 U	1 U	1 U	**1800**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-18	BDC-05-18-150426	N	4/26/2015	1 U	1 U	1 U	**950**
BDC-05-18	BDC-05-18-150720	N	7/20/2015	1 U	1 U	1 U	**290**
BDC-05-18	BDC-05-18-151027	N	10/27/2015	1 U	1 U	1 U	**1700**
BDC-05-18	BDC-05-18-160126	N	1/26/2016	1 U	1 U	1 U	**170**
BDC-05-18	BDC-05-18-160420	N	4/20/2016	1 U	1 U	1 U	**320**
BDC-05-18	BDC-05-18-160809	N	8/9/2016	1.0 U	1.0 U	1.0 U	**740**
BDC-05-18	BDC-05-18-161102	N	11/2/2016	1 U	1 U	1 U	**3300**
BDC-05-18	BDC-05-18-170207	N	2/7/2017	1 U	1 U	1 U	**720**
BDC-05-18	BDC-05-18-170503	N	5/3/2017	1 U	1 U	1 U	**95**
BDC-05-18	BDC-05-18-170801	N	8/1/2017	1.0 U	1.0 U	1.0 U	**3900**
BDC-05-18	BDC-05-18-171107	N	11/7/2017	1.0 U	1.0 U	1.0 U	**7200**
BDC-05-18	BDC-05-18-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**15600**
BDC-05-18	BDC-05-18-181107	N	11/7/2018	1.06 U	1.23 U	1.14 U	**14600**
BDC-05-18	BDC-05-18-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**4710**
BDC-05-18	BDC-05-18-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**2430**
BDC-05-19	BDC-05-19-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**4740**
BDC-05-19	BDC-05-19-111101	N	11/1/2011	1.1 U	1.2 U	1.1 U	**4520**
BDC-05-19	BDC-05-19-120219	N	2/19/2012	1 U	1 U	**1.4 J**	**22000**
BDC-05-19	BDC-05-19-DUP-120219	FD	2/19/2012	1 U	1 U	**1.9 J**	**19000**
BDC-05-19	BDC-05-19-120506	N	5/6/2012	1 U	1 U	**1.8 J**	**25000**
BDC-05-19	BDC-05-19-120905	N	9/5/2012	1 U	1 U	**3.9 J**	**19000**
BDC-05-19	BDC-05-19-121115	N	11/15/2012	1 U	1 U	**5.5**	**24000**
BDC-05-19	BDC-05-19-130225	N	2/25/2013	5 U	5 U	**6.5**	**23000**
BDC-05-19	BDC-05-19-130522	N	5/22/2013	1 U	3 U	**7.2**	**22000**
BDC-05-19	BDC-05-19-130828	N	8/28/2013	1 U	**2.5 J**	**7.3**	**22000**
BDC-05-19	BDC-05-19-131113	N	11/13/2013	1 U	**3 J**	**4.1 J**	**26000**
BDC-05-19	BDC-05-19-140211	N	2/11/2014	1 U	**5.7**	**2.5 J**	**23000**
BDC-05-19	BDC-05-19-140513	N	5/13/2014	1 U	**5.9**	**2 J**	**26000**
BDC-05-19	BDC-05-19-140806	N	8/6/2014	1 U	**4.6 J**	**5.4**	**21000**
BDC-05-19	BDC-05-19-141110	N	11/10/2014	1 U	**7**	**2.5 J**	**25000**
BDC-05-19	BDC-05-19-150121	N	1/21/2015	1 U	**4 J**	**1.3 J**	**18000**
BDC-05-19	BDC-05-19-150427	N	4/27/2015	1 U	**3.5 J**	1 U	**19000**
BDC-05-19	BDC-05-19-150721	N	7/21/2015	1 U	**2.2 J**	**1.6 J**	**21000**
BDC-05-19	BDC-05-19-151028	N	10/28/2015	1 U	**3.3 J**	1 U	**19000**
BDC-05-19	BDC-05-19-160126	N	1/26/2016	1 U	**3.4 J**	1 U	**18000**
BDC-05-19	BDC-05-19-DUP-160126	FD	1/26/2016	1 U	**3.4 J**	**1.1 J**	**21000**
BDC-05-19	BDC-05-19-160420	N	4/20/2016	1 U	**3.4 J**	1 U	**19000**
BDC-05-19	BDC-05-19-160809	N	8/9/2016	1.0 U	**3.9 J**	1.0 U	**17000**
BDC-05-19	BDC-05-DUP2-160809	FD	8/9/2016	1.0 U	**3.8 J**	1.0 U	**19000**
BDC-05-19	BDC-05-19-161103	N	11/3/2016	1 U	1 U	1 U	**18000**
BDC-05-19	BDC-05-19-170208	N	2/8/2017	1 U	**3.2 J**	1 U	**16000**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-19	BDC-05-DUP-170208	FD	2/8/2017	1 U	**3.4 J**	1 U	**16000**
BDC-05-19	BDC-05-19-170504	N	5/4/2017	1 U	**2.3 J**	1 U	**13000**
BDC-05-19	BDC-05-19-170801	N	8/1/2017	1.0 U	**9.3 J**	1.0 U	**15000**
BDC-05-19	BDC-DUP2-170801	FD	8/1/2017	1.0 U	**9.9 J**	1.0 U	**14000**
BDC-05-19	BDC-05-19-171106	N	11/6/2017	1.0 U	**1.5 J**	1.0 U	**15000**
BDC-05-19	BDC-05-19-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**13800**
BDC-05-19	BDC-05-19-181106	N	11/6/2018	1.06 U	1.23 U	1.14 U	**20900**
BDC-05-19	BDC-05-19-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**19700**
BDC-05-19	BDC-05-19-191105	N	11/5/2019	1.06 U	1.23 U	1.14 U	**14800**
BDC-05-20	BDC-05-20-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**210**
BDC-05-20	BDC-05-20-111103	N	11/3/2011	1.1 U	1.2 U	1.1 U	**4590**
BDC-05-20	BDC-05-20-120219	N	2/19/2012	1 U	1 U	1 U	**16000**
BDC-05-20	BDC-05-20-120507	N	5/7/2012	1 U	1 U	1 U	**20000**
BDC-05-20	BDC-05-20-120905	N	9/5/2012	1 U	1 U	1 U	**14000**
BDC-05-20	BDC-05-20-121116	N	11/16/2012	1 U	1 U	1 U	**18000**
BDC-05-20	BDC-05-20-130226	N	2/26/2013	5 U	5 U	5 U	**22000**
BDC-05-20	BDC-05-20-130523	N	5/23/2013	1 U	1 U	**1.5 J**	**25000**
BDC-05-20	BDC-05-20-130828	N	8/28/2013	1 U	1 U	**2.1 J**	**20000**
BDC-05-20	BDC-05-20-DUP-130828	FD	8/28/2013	1 U	1 U	**2.2 J**	**20000**
BDC-05-20	BDC-05-20-131114	N	11/14/2013	1 U	1 U	**2.2 J**	**19000**
BDC-05-20	BDC-05-20-140212	N	2/12/2014	1 U	4 U	**3 J**	**16000**
BDC-05-20	BDC-05-20-140513	N	5/13/2014	1 U	1 U	**2 J**	**16000**
BDC-05-20	BDC-05-20-140806	N	8/6/2014	1 U	**2 J**	**2.1 J**	**12000**
BDC-05-20	BDC-05-20-141110	N	11/10/2014	1 U	**3.6 J**	**3 J**	**15000**
BDC-05-20	BDC-05-20-150121	N	1/21/2015	1 U	**2.6 J**	**2.7 J**	**13000**
BDC-05-20	BDC-05-20-150426	N	4/26/2015	1 U	**1.6 J**	**4.8 J**	**14000**
BDC-05-20	BDC-05-20-150721	N	7/21/2015	1 U	**3 J**	**4.5 J**	**17000**
BDC-05-20	BDC-05-20-151027	N	10/27/2015	1 U	**1.1 J**	**1.5 J**	**11000**
BDC-05-20	BDC-05-20-160126	N	1/26/2016	1 U	**1.5 J**	**2.1 J**	**11000**
BDC-05-20	BDC-05-20-160421	N	4/21/2016	1 U	**2.5 J**	**6.1**	**8800**
BDC-05-20	BDC-05-20-160809	N	8/9/2016	1.0 U	**2.9 J**	**7.0**	**8400**
BDC-05-20	BDC-05-20-161103	N	11/3/2016	1 U	**2.5 J**	**5.2**	**8900**
BDC-05-20	BDC-05-20-170208	N	2/8/2017	1 U	**2.8 J**	**5.2**	**7100**
BDC-05-20	BDC-05-20-170504	N	5/4/2017	1 U	**4.3 J**	**2.3 J**	**4300**
BDC-05-20	BDC-05-20-170801	N	8/1/2017	1.0 U	**4.6 J**	**1.4 J**	**6400**
BDC-05-20	BDC-05-20-171107	N	11/7/2017	1.0 U	**1.3 J**	1.0 U	**8700**
BDC-05-20	BDC-DUP3-171107	FD	11/7/2017	1.0 U	**1.3 J**	1.0 U	**8700**
BDC-05-20	BDC-05-20-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**3900**
BDC-05-20	BDC-05-20-181107	N	11/7/2018	1.06 U	1.23 U	1.14 U	**24300**
BDC-05-20	BDC-05-20-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**22900**
BDC-05-20	BDC-05-20-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**20800**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-21	BDC-05-21-110731	N	7/31/2011	1.1 U	1.2 U	**2.6**	**5590**
BDC-05-21	BDC-05-21-130226	N	2/26/2013	5 U	5 U	5 U	**18000**
BDC-05-21	BDC-05-21-130828	N	8/28/2013	1 U	**1.8 J**	**6.2**	**14000**
BDC-05-21	BDC-05-21-131114	N	11/14/2013	1 U	**1.4 J**	**3.5 J**	**12000**
BDC-05-21	BDC-05-21-140212	N	2/12/2014	1 U	**2.9 J**	**1.9 J**	**12000**
BDC-05-21	BDC-05-21-140513	N	5/13/2014	1 U	**2.9 J**	**2.8 J**	**9100**
BDC-05-21	BDC-05-21-140806	N	8/6/2014	1 U	**1.8 J**	**3.8 J**	**6500**
BDC-05-21	BDC-05-21-141110	N	11/10/2014	1 U	**1.2 J**	**4.3 J**	**5800**
BDC-05-21	BDC-05-21-150121	N	1/21/2015	1 U	1 U	**2.2 J**	**1800**
BDC-05-21	BDC-05-21-150427	N	4/27/2015	1 U	1 U	**2.7 J**	**4800**
BDC-05-21	BDC-05-21-150720	N	7/20/2015	1 U	1 U	**2.7 J**	**6800**
BDC-05-21	BDC-05-21-151027	N	10/27/2015	1 U	1 U	**2.1 J**	**3000**
BDC-05-21	BDC-05-21-160126	N	1/26/2016	1 U	1 U	**1.2 J**	**2500**
BDC-05-21	BDC-05-21-160421	N	4/21/2016	1 U	1 U	**1.6 J**	**4600**
BDC-05-21	BDC-05-DUP2-160421	FD	4/21/2016	1 U	1 U	**1.6 J**	**4400**
BDC-05-21	BDC-05-21-160809	N	8/9/2016	1.0 U	**2.3 J**	**3.0 J**	**11000**
BDC-05-21	BDC-05-21-161102	N	11/2/2016	1 U	**1.8 J**	**1.2 J**	**8800**
BDC-05-21	BDC-DUP3-161102	FD	11/2/2016	1 U	**1.9 J**	**1.3 J**	**8300**
BDC-05-21	BDC-05-21-170207	N	2/7/2017	1 U	**1.6 J**	1 U	**9100**
BDC-05-21	BDC-05-21-170503	N	5/3/2017	1 U	**1.3 J**	**2.8 J**	**3400 J**
BDC-05-21	BDC-DUP3-170503	FD	5/3/2017	1 U	**1.3 J**	**2.8 J**	**4900 J**
BDC-05-21	BDC-05-21-170801	N	8/1/2017	1.0 U	**5.6**	**3.9 J**	**4900**
BDC-05-21	BDC-05-21-171107	N	11/7/2017	1.0 U	**2.5 J**	1.0 U	**5800**
BDC-05-21	BDC-05-21-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**9110**
BDC-05-21	BDC-05-21-181107	N	11/7/2018	1.06 U	1.23 U	1.14 U	**10300**
BDC-05-21	BDC-05-21-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**5060**
BDC-05-21	BDC-05-21-191106	N	11/6/2019	1.06 U	1.23 U	1.14 U	**5140**
BDC-05-22	BDC-05-22-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**5050**
BDC-05-23	BDC-05-23-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**5990**
BDC-05-24	BDC-05-24-110731	N	7/31/2011	1.1 U	1.2 U	1.1 U	**7600**
BDC-05-24	BDC-05-24-130225	N	2/25/2013	5 U	5 U	5 U	**9100**
BDC-05-24	BDC-05-24-130828	N	8/28/2013	1 U	**1.8 J**	1 U	**11000**
BDC-05-24	BDC-05-24-131113	N	11/13/2013	1 U	**1.4 J**	1 U	**11000**
BDC-05-24	BDC-05-24-140212	N	2/12/2014	1 U	**3 J**	**1.1 J**	**11000**
BDC-05-24	BDC-05-24-140512	N	5/12/2014	1 U	**2.3 J**	**1 J**	**10000**
BDC-05-24	BDC-05-24-140806	N	8/6/2014	1 U	**2.3 J**	**3.6 J**	**9600**
BDC-05-24	BDC-05-24-DUP-140806	FD	8/6/2014	1 U	**2.6 J**	**4.8 J**	**10000**
BDC-05-24	BDC-05-24-141110	N	11/10/2014	1 U	1 U	**2 J**	**970**
BDC-05-24	BDC-05-24-150121	N	1/21/2015	1 U	1 U	**2.5 J**	**5400**
BDC-05-24	BDC-05-24-DUP-150121	FD	1/21/2015	1 U	1 U	**2.6 J**	**5500**
BDC-05-24	BDC-05-24-150427	N	4/27/2015	1 U	1 U	**2.5 J**	**3200**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-05-24	BDC-05-24-DUP-150427	FD	4/27/2015	1 U	**1.1 J**	**2.8 J**	**3200**
BDC-05-24	BDC-05-24-150721	N	7/21/2015	1 U	1 U	1 U	**450**
BDC-05-24	BDC-05-24-151028	N	10/28/2015	1 U	1 U	1 U	**1400**
BDC-05-24	BDC-05-24-160126	N	1/26/2016	1 U	**1.2 J**	1 U	**12000**
BDC-05-24	BDC-05-24-160420	N	4/20/2016	1 U	**1.8 J**	1 U	**7500**
BDC-05-24	BDC-05-DUP1-160420	FD	4/20/2016	1 U	**2 J**	**1 J**	**7500**
BDC-05-24	BDC-05-24-160809	N	8/9/2016	1.0 U	**3.6 J**	**3.6 J**	**6000**
BDC-05-24	BDC-05-24-161103	N	11/3/2016	1 U	**1.3 J**	**1.9 J**	**12000**
BDC-05-24	BDC-05-24-170208	N	2/8/2017	1 U	**3.2 J**	**2.7 J**	**5900**
BDC-05-24	BDC-05-24-170504	N	5/4/2017	1 U	**3.7 J**	1 U	**5900**
BDC-05-24	BDC-05-24-170801	N	8/1/2017	1.0 U	1.0 U	**1.1 J**	**11000**
BDC-05-24	BDC-05-24-171107	N	11/7/2017	1.0 U	**1.3 J**	1.0 U	**12000**
BDC-05-24	BDC-05-24-180502	N	5/2/2018	1.06 U	1.23 U	1.14 U	**7240**
BDC-05-24	BDC-05-24-181106	N	11/6/2018	1.06 U	1.23 U	1.14 U	**17000**
BDC-05-24	BDC-05-24-190502	N	5/2/2019	1.06 U	1.23 U	1.14 U	**12700**
BDC-05-24	BDC-05-24-191105	N	11/5/2019	1.06 U	1.23 U	1.14 U	**8920**
SWMU-20							
BDC-MW-10A	MW-10A-040503	N	5/3/2004	--	0.5 U	0.5 U	**2.8**
BDC-MW-10A	MW-10A-040823	N	8/23/2004	--	0.5 U	0.5 U	**1.1**
BDC-MW-10A	MW-10A-041019	N	10/19/2004	--	0.5 U	0.5 U	**2.7**
BDC-MW-10A	MW-10A-050221	N	2/21/2005	--	**0.54**	0.50 U	**430**
BDC-MW-10A	MW-10A-050511	N	5/11/2005	--	0.5 U	0.5 U	**540**
BDC-MW-10A	MW-10A-050822	N	8/22/2005	--	0.5 U	0.5 U	**240**
BDC-MW-10A	MW-10A-051114	N	11/14/2005	--	0.5 U	0.5 U	**370**
BDC-MW-10A	MW-10A-060221	N	2/21/2006	--	12.3 U	11.4 U	**1130**
BDC-MW-10A	MW-10A-060515	N	5/15/2006	--	12 U	11 U	**3100**
BDC-MW-10A	MW-10A-060816	N	8/16/2006	--	1.2 U	1.1 U	**1620 J**
BDC-MW-10A	MW-10A-061127	N	11/27/2006	--	**2.6**	**2.6**	**1650**
BDC-MW-10A	MW-10A-070222	N	2/22/2007	--	1.2 U	1.1 U	**1370**
BDC-MW-10A	MW-10A-070522	N	5/22/2007	--	**1.4**	1.1 U	**2590**
BDC-MW-10A	MW-10A-071129	N	11/29/2007	--	**3.7**	**4.4**	**4810**
BDC-MW-10A	MW-10A-080519	N	5/19/2008	--	**4.4**	**7.9**	**4870**
BDC-MW-10A	MW-10A-081124	N	11/24/2008	--	1.2 U	1.1 U	**16900**
BDC-MW-10A	MW-10A-090518	N	5/18/2009	--	1.2 U	1.1 U	**17900**
BDC-MW-10A	MW-10A-091116	N	11/16/2009	--	1.2 U	1.1 U	**18200**
BDC-MW-10A	MW-10A-100520	N	5/20/2010	--	1.2 U	1.1 U	**17600**
BDC-MW-10A	MW-10A-101110	N	11/10/2010	--	1.2 U	1.1 U	**22800**
BDC-MW-10A	MW-10A-110503	N	5/3/2011	--	1.2 U	1.1 U	**20700**
BDC-MW-10A	MW-10A-111113	N	11/13/2011	--	1.2 U	1.1 U	**15400**
BDC-MW-10A	MW-10A-120514	N	5/14/2012	--	1 U	1 U	**20000**
BDC-MW-10A	MW-10A-121114	N	11/14/2012	--	1 U	1 U	**19000**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-MW-10A	MW-10A-130521	N	5/21/2013	--	3 U	1 U	**26000**
BDC-MW-10A	MW-10A-131112	N	11/12/2013	--	**2.5 J**	1 U	**16000**
BDC-MW-10A	MW-10A-140507	N	5/7/2014	--	1 U	1 U	**26000**
BDC-MW-10A	MW-10A-141105	N	11/5/2014	--	**5.5**	1 U	**25000**
BDC-MW-14A	MW-14A-040504	N	5/4/2004	--	0.5 U	0.5 U	**590**
BDC-MW-14A	MW-14A-040823	N	8/23/2004	--	**0.67**	**0.89**	**840**
BDC-MW-14A	MW-14A-041019	N	10/19/2004	--	0.5 U	0.5 U	**350**
BDC-MW-14A	MW-14A-050221	N	2/21/2005	--	**2.7**	**13**	**1700**
BDC-MW-14A	MW-14A-050516	N	5/16/2005	--	0.5 U	0.5 U	**590**
BDC-MW-14A	MW-14A-050822	N	8/22/2005	--	0.5 U	0.5 U	**220**
BDC-MW-14A	MW-14A-051115	N	11/15/2005	--	0.5 U	0.5 U	**2500**
BDC-MW-14A	MW-14A-060221	N	2/21/2006	--	12.3 U	11.4 U	**5400**
BDC-MW-14A	MW-14A-DUP-060221	FD	2/21/2006	--	12.3 U	11.4 U	**6580**
BDC-MW-14A	MW-14A-060517	N	5/17/2006	--	12 U	11 U	**9400**
BDC-MW-14A	MW-14A-060816	N	8/16/2006	--	1.2 U	1.1 U	**6320**
BDC-MW-14A	MW-14A-DUP-060816	FD	8/16/2006	--	1.2 U	1.1 U	**6420**
BDC-MW-14A	MW-14A-061129	N	11/29/2006	--	1.2 U	1.1 U	**11100**
BDC-MW-14A	MW-14A-070222	N	2/22/2007	--	1.2 U	1.1 U	**7670**
BDC-MW-14A	MW-14A-070523	N	5/23/2007	--	1.2 U	1.1 U	**10100**
BDC-MW-14A	MW-14A-071203	N	12/3/2007	--	1.2 U	1.1 U	**14500**
BDC-MW-14A	MW-14A-080520	N	5/20/2008	--	1.2 U	1.1 U	**12100**
BDC-MW-14A	MW-14A-081124	N	11/24/2008	--	1.2 U	1.1 U	**14500**
BDC-MW-14A	MW-14A-090520	N	5/20/2009	--	1.2 U	1.1 U	**14400**
BDC-MW-14A	MW-14A-DUP-090520	FD	5/20/2009	--	1.2 U	1.1 U	**15000**
BDC-MW-14A	MW-14A-091117	N	11/17/2009	--	1.2 U	1.1 U	**15800**
BDC-MW-14A	MW-14A-100524	N	5/24/2010	--	1.2 U	1.1 U	**14600**
BDC-MW-14A	MW-14A-101110	N	11/10/2010	--	1.2 U	1.1 U	**14300**
BDC-MW-14A	MW-14A-110505	N	5/5/2011	--	1.2 U	1.1 U	**15100**
BDC-MW-14A	MW-14A-111113	N	11/13/2011	--	1.2 U	1.1 U	**7510**
BDC-MW-14A	MW-14A-120514	N	5/14/2012	--	**8.7**	1 U	**16000**
BDC-MW-14A	MW-14A-121114	N	11/14/2012	--	**5 J**	1 U	**16000**
BDC-MW-14A	MW-14A-130521	N	5/21/2013	--	**4.8 J**	1 U	**18000**
BDC-MW-14A	MW-14A-131112	N	11/12/2013	--	**6.3**	1 U	**14000**
BDC-MW-14A	MW-14A-140507	N	5/7/2014	--	**4.6 J**	1 U	**15000**
BDC-MW-14A	MW-14A-141105	N	11/5/2014	--	**10**	1 U	**15000**
BDC-MW-19A	MW-19A-050221	N	2/21/2005	--	0.50 U	0.50 U	**17**
BDC-MW-19A	MW-19A-050512	N	5/12/2005	--	0.5 U	0.5 U	**9.1**
BDC-MW-19A	MW-19A-050822	N	8/22/2005	--	0.5 U	0.5 U	**16**
BDC-MW-19A	MW-19A-051115	N	11/15/2005	--	0.5 U	0.5 U	**35**
BDC-MW-19A	MW-19A-060222	N	2/22/2006	--	12.3 U	11.4 U	**111**
BDC-MW-19A	MW-19A-060517	N	5/17/2006	--	12 U	11 U	**230**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-MW-19A	MW-19A-060815	N	8/15/2006	--	1.2 U	1.1 U	**202**
BDC-MW-19A	MW-19A-061127	N	11/27/2006	--	1.2 U	1.1 U	**186**
BDC-MW-19A	MW-19A-070222	N	2/22/2007	--	1.2 U	1.1 U	**248**
BDC-MW-19A	MW-19A-070522	N	5/22/2007	--	**5.2**	1.1 U	**179**
BDC-MW-19A	MW-19A-071129	N	11/29/2007	--	1.2 U	1.1 U	**235**
BDC-MW-19A	MW-19A-080520	N	5/20/2008	--	1.2 U	1.1 U	**134**
BDC-MW-19A	MW-19A-081123	N	11/23/2008	--	1.2 U	1.1 U	**97.8 J**
BDC-MW-19A	MW-19A-090519	N	5/19/2009	--	1.2 U	1.1 U	**127**
BDC-MW-19A	MW-19A-091118	N	11/18/2009	--	1.2 U	1.1 U	**122**
BDC-MW-22A	MW-22A-050321	N	3/21/2005	--	0.50 U	0.50 U	**280**
BDC-MW-22A	MW-22A-050512	N	5/12/2005	--	0.5 U	0.5 U	**300**
BDC-MW-22A	MW-22A-050822	N	8/22/2005	--	0.5 U	0.5 U	**230**
BDC-MW-22A	MW-22A-051116	N	11/16/2005	--	0.5 U	0.5 U	**1300**
BDC-MW-22A	MW-22A-060222	N	2/22/2006	--	12.3 U	11.4 U	**1940**
BDC-MW-22A	MW-22A-060517	N	5/17/2006	--	12 U	11 U	**3600**
BDC-MW-22A	MW-22A-060815	N	8/15/2006	--	1.2 U	1.1 U	**5700**
BDC-MW-22A	MW-22A-061130	N	11/30/2006	--	1.2 U	1.1 U	**4020**
BDC-MW-22A	MW-22A-070222	N	2/22/2007	--	1.2 U	1.1 U	**3000**
BDC-MW-22A	MW-22A-070523	N	5/23/2007	--	1.2 U	1.1 U	**3510**
BDC-MW-22A	MW-22A-071203	N	12/3/2007	--	1.2 U	1.1 U	**2030**
BDC-MW-22A	MW-22A-080520	N	5/20/2008	--	1.2 U	1.1 U	**1540**
BDC-MW-22A	MW-22A-081123	N	11/23/2008	--	1.2 U	1.1 U	**3100**
BDC-MW-22A	MW-22A-090519	N	5/19/2009	--	1.2 U	1.1 U	**3490**
BDC-MW-22A	MW-22A-091118	N	11/18/2009	--	1.2 U	1.1 U	**2060**
BDC-MW-22A	MW-22A-100524	N	5/24/2010	--	1.2 U	1.1 U	**2370**
BDC-MW-22A	MW-22A-101111	N	11/11/2010	--	1.2 U	1.1 U	**4650**
BDC-MW-22A	MW-22A-110504	N	5/4/2011	--	1.2 U	1.1 U	**6350**
BDC-MW-22A	MW-22A-111113	N	11/13/2011	--	1.2 U	1.1 U	**2510**
BDC-MW-22A	MW-22A-120514	N	5/14/2012	--	**3.3 J**	1 U	**5100**
BDC-MW-22A	MW-22A-121114	N	11/14/2012	--	**1.7 J**	1 U	**4400**
BDC-MW-22A	MW-22A-130520	N	5/20/2013	--	**1.6 J**	1 U	**6100**
BDC-MW-22A	MW-22A-131112	N	11/12/2013	--	**1.1 J**	1 U	**3500**
BDC-MW-22A	MW-22A-140507	N	5/7/2014	--	1 U	1 U	**4200**
BDC-MW-22A	MW-22A-141105	N	11/5/2014	--	**1.5 J**	1 U	**4800**
BDC-MW-22A	MW-22A-150429	N	4/29/2015	--	1 U	1 U	**4300**
BDC-MW-22A	MW-22A-151027	N	10/27/2015	--	1 U	1 U	**3500**
BDC-MW-22A	MW-22A-160419	N	4/19/2016	--	100 U	100 U	**15000**
BDC-MW-22A	MW-22A-161102	N	11/2/2016	--	100 U	100 U	**18000**
BDC-MW-22A	MW-22A-170502	N	5/2/2017	--	1 U	1 U	**18000 J**
BDC-MW-22A	MW-22A-171108	N	11/8/2017	--	**1.8 J**	1.0 U	**17000 J**
BDC-MW-22A	MW-22A-180501	N	5/1/2018	1.06 UJ	1.23 UJ	1.14 UJ	**18800**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-MW-22A	MW-22A-181105	N	11/5/2018	--	1.23 U	1.14 U	**13100**
BDC-MW-22A	MW-22A-190501	N	5/1/2019	--	1.23 U	1.14 U	**14400**
BDC-MW-22A	MW-22A-191104	N	11/4/2019	--	1.23 U	1.14 U	**10000**
BDC-MW-23A	MW-23A-050321	N	3/21/2005	--	0.50 U	0.50 U	**410**
BDC-MW-23A	MW-23A-050512	N	5/12/2005	--	0.5 U	0.5 U	**260**
BDC-MW-23A	MW-23A-050822	N	8/22/2005	--	0.5 U	0.5 U	**98 J**
BDC-MW-23A	MW-23A-DUP-050822	FD	8/22/2005	--	0.5 U	0.5 U	**130 J**
BDC-MW-23A	MW-23A-051116	N	11/16/2005	--	0.5 U	0.5 U	**140**
BDC-MW-23A	MW-23A-060222	N	2/22/2006	--	12.3 U	11.4 U	**1520**
BDC-MW-23A	MW-23A-060517	N	5/17/2006	--	12 U	11 U	**1700**
BDC-MW-23A	MW-23A-060815	N	8/15/2006	--	1.2 U	1.1 U	**3080**
BDC-MW-23A	MW-23A-061130	N	11/30/2006	--	1.2 U	1.1 U	**1930**
BDC-MW-23A	MW-23A-070222	N	2/22/2007	--	1.2 U	1.1 U	**1360**
BDC-MW-23A	MW-23A-070523	N	5/23/2007	--	1.2 U	1.1 U	**1850**
BDC-MW-23A	MW-23A-071130	N	11/30/2007	--	1.2 U	1.1 U	**4430**
BDC-MW-23A	MW-23A-080521	N	5/21/2008	--	1.2 U	1.1 U	**1570**
BDC-MW-23A	MW-23A-081125	N	11/25/2008	--	1.2 U	1.1 U	**3270**
BDC-MW-23A	MW-23A-090519	N	5/19/2009	--	1.2 U	1.1 U	**2370**
BDC-MW-23A	MW-23A-091118	N	11/18/2009	--	1.2 U	1.1 U	**1970**
BDC-MW-6A	MW-06A-040615	N	6/15/2004	--	0.5 U	0.5 U	0.5 U
BDC-MW-6A	MW-06A-040823	N	8/23/2004	--	0.5 U	0.5 U	**21**
BDC-MW-6A	MW-06A-041019	N	10/19/2004	--	0.5 U	0.5 U	**530**
BDC-MW-6A	MW-06A-DUP-041019	FD	10/19/2004	--	0.5 U	0.5 U	**610**
BDC-MW-6A	MW-06A-050222	N	2/22/2005	--	0.50 U	0.50 U	**130**
BDC-MW-6A	MW-06A-050516	N	5/16/2005	--	0.5 U	0.5 U	**10000**
BDC-MW-6A	MW-06A-050822	N	8/22/2005	--	0.5 U	0.5 U	**390**
BDC-MW-6A	MW-06A-051114	N	11/14/2005	--	0.5 U	0.5 U	**3700 J**
BDC-MW-6A	MW-06A-DUP-051114	FD	11/14/2005	--	0.5 U	0.5 U	**2300 J**
BDC-MW-6A	MW-06A-060222	N	2/22/2006	--	12.3 U	11.4 U	**10100**
BDC-MW-6A	MW-06A-060518	N	5/18/2006	--	12 U	11 U	**16000**
BDC-MW-6A	MW-06A-DUP-060518	FD	5/18/2006	--	12 U	11 U	**14000**
BDC-MW-6A	MW-06A-060816	N	8/16/2006	--	1.2 U	1.1 U	**18800**
BDC-MW-6A	MW-06A-061129	N	11/29/2006	--	1.2 U	1.1 U	**20200**
BDC-MW-6A	MW-06A-070223	N	2/23/2007	--	1.2 U	1.1 U	**17400**
BDC-MW-6A	MW-06A-070524	N	5/24/2007	--	**2**	1.1 U	**18300**
BDC-MW-6A	MW-06A-071130	N	11/30/2007	--	**2.2**	1.1 U	**21900**
BDC-MW-6A	MW-06A-080521	N	5/21/2008	--	**1.3**	1.1 U	**13200**
BDC-MW-6A	MW-06A-DUP-080521	FD	5/21/2008	--	**1.4**	1.1 U	**13900**
BDC-MW-6A	MW-06A-081125	N	11/25/2008	--	1.2 U	1.1 U	**19700**
BDC-MW-6A	MW-06A-DUP-081125	FD	11/25/2008	--	1.2 U	1.1 U	**17000**
BDC-MW-6A	MW-06A-090520	N	5/20/2009	--	1.2 U	1.1 U	**19500**

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Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-MW-6A	MW-06A-091119	N	11/19/2009	--	1.2 U	1.1 U	**20100**
BDC-MW-6A	MW-06A-100524	N	5/24/2010	--	1.2 U	1.1 U	**19900**
BDC-MW-6A	MW-06A-101110	N	11/11/2010	--	1.2 U	1.1 U	**24700**
BDC-MW-6A	MW-06A-110504	N	5/4/2011	--	1.2 U	1.1 U	**21400**
BDC-MW-6A	MW-06A-111113	N	11/13/2011	--	1.2 U	1.1 U	**6370**
BDC-MW-6A	MW-06A-120515	N	5/15/2012	--	1 U	1 U	**13000**
BDC-MW-6A	MW-06A-121114	N	11/14/2012	--	4 U	1 U	**13000**
BDC-MW-6A	MW-06A-130521	N	5/21/2013	--	1 U	1 U	**5200**
BDC-MW-6A	MW-06A-131112	N	11/12/2013	--	1 U	1 U	**3500**
BDC-MW-6A	MW-06A-140507	N	5/7/2014	--	1 U	1 U	**1300**
BDC-MW-6A	MW-06A-141105	N	11/5/2014	--	1 U	1 U	**770**
BDC-MW-6A	MW-06A-150429	N	4/29/2015	--	1 U	1 U	**430**
BDC-MW-6A	MW-06A-151026	N	10/26/2015	--	1 U	1 U	**410**
BDC-MW-6A	MW-06A-160419	N	4/19/2016	--	100 U	100 U	**18000**
BDC-MW-6A	MW-6A-161101	N	11/1/2016	--	100 U	100 U	**20000**
BDC-MW-6A	MW-06A-170502	N	5/2/2017	--	**1.4 J**	1 U	**18000**
BDC-MW-6A	MW-06A-171108	N	11/8/2017	--	**3.4 J**	1.0 U	**13000 J**
BDC-MW-6A	MW-6A-180501	N	5/1/2018	1.06 U	1.23 U	1.14 U	**6130**
BDC-MW-6A	MW-6A-181106	N	11/6/2018	--	**1.55**	1.14 U	**5090**
BDC-MW-6A	MW-6A-190501	N	5/1/2019	--	**1.80**	1.14 U	**4220**
BDC-MW-6A	MW-6A-191106	N	11/6/2019	--	1.23 U	1.14 U	**1730**
BDC-MW-6B	MW-06B-040504	N	5/4/2004	--	0.5 U	0.5 U	**130**
BDC-MW-6B	MW-06B-040823	N	8/23/2004	--	0.5 U	0.5 U	**1100**
BDC-MW-6B	MW-06B-041019	N	10/19/2004	--	0.5 U	0.5 U	**590**
BDC-MW-6B	MW-06B-050222	N	2/22/2005	--	0.50 U	0.50 U	**3800**
BDC-MW-6B	MW-06B-050516	N	5/16/2005	--	0.5 U	0.5 U	**2300 J**
BDC-MW-6B	MW-06B-050822	N	8/22/2005	--	0.5 U	0.5 U	**440**
BDC-MW-6B	MW-06B-051114	N	11/14/2005	--	0.5 U	0.5 U	**2900**
BDC-MW-6B	MW-06B-060222	N	2/22/2006	--	12.3 U	**53.5**	**13000**
BDC-MW-6B	MW-06B-060518	N	5/18/2006	--	12 U	11 U	**16000**
BDC-MW-6B	MW-06B-060816	N	8/16/2006	--	1.2 U	1.1 U	**21700**
BDC-MW-6B	MW-06B-061129	N	11/29/2006	--	1.2 U	1.1 U	**22000**
BDC-MW-6B	MW-06B-070223	N	2/23/2007	--	1.2 U	1.1 U	**17700**
BDC-MW-6B	MW-06B-070524	N	5/24/2007	--	1.2 U	1.1 U	**18500**
BDC-MW-6B	MW-06B-071130	N	11/30/2007	--	**4**	1.1 U	**24900**
BDC-MW-6B	MW-06B-080521	N	5/21/2008	--	**4.9**	1.1 U	**12700**
BDC-MW-6B	MW-06B-081125	N	11/25/2008	--	1.2 U	1.1 U	**18400**
BDC-MW-6B	MW-06B-090520	N	5/20/2009	--	1.2 U	1.1 U	**25300**
BDC-MW-6B	MW-06B-091119	N	11/19/2009	--	**6.7**	1.1 U	**22500**
BDC-MW-6B	MW-06B-100524	N	5/24/2010	--	**1.6**	1.1 U	**7110**
BDC-MW-6B	MW-06B-101111	N	11/11/2010	--	**1.4**	1.1 U	**4600**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-MW-6B	MW-06B-110504	N	5/4/2011	--	1.2 U	1.1 U	**2120**
BDC-MW-6B	MW-06B-111113	N	11/13/2011	--	1.2 U	1.1 U	**2260**
BDC-MW-6B	MW-06B-120515	N	5/15/2012	--	**1.3 J**	1 U	**2200**
BDC-MW-6B	MW-06B-121114	N	11/14/2012	--	**1.8 J**	1 U	**2300**
BDC-MW-6B	MW-06B-130521	N	5/21/2013	--	1 U	1 U	**720**
BDC-MW-6B	MW-06B-131112	N	11/12/2013	--	1 U	1 U	**350**
BDC-MW-6B	MW-06B-140507	N	5/7/2014	--	1 U	1 U	**1200**
BDC-MW-6B	MW-06B-141105	N	11/5/2014	--	1 U	1 U	**2200**
BDC-MW-6B	MW-06B-150429	N	4/29/2015	--	1 U	1 U	**1300**
BDC-MW-6B	MW-06B-151026	N	10/26/2015	--	1 U	1 U	**1900**
BDC-MW-6B	MW-06B-160419	N	4/19/2016	--	100 U	100 U	**17000**
BDC-MW-6B	MW-6B-161101	N	11/1/2016	--	100 U	100 U	**23000**
BDC-MW-6B	MW-06B-170502	N	5/2/2017	--	1 U	1 U	**21000**
BDC-MW-6B	MW-06B-171108	N	11/8/2017	--	**2.4 J**	1.0 U	**18000**
BDC-MW-6B	MW-6B-180501	N	5/1/2018	1.06 U	1.23 U	1.14 U	**5370**
BDC-MW-6B	MW-6B-181106	N	11/6/2018	--	1.23 U	1.14 U	**4870**
BDC-MW-6B	MW-6B-190501	N	5/1/2019	--	1.23 U	1.14 U	**4510**
BDC-MW-6B	MW-6B-191120	N	11/20/2019		1.23 U	1.14 U	**2590**
BDC-MW-6C	MW-06C-040504	N	5/4/2004	--	**0.6**	0.5 U	**360**
BDC-MW-6C	MW-06C-040823	N	8/23/2004	--	**5.9**	**5.7**	**3100**
BDC-MW-6C	MW-06C-041019	N	10/19/2004	--	0.5 U	0.5 U	**450**
BDC-MW-6C	MW-06C-050222	N	2/22/2005	--	0.50 U	0.50 U	**2400**
BDC-MW-6C	MW-06C-050516	N	5/16/2005	--	0.5 U	0.5 U	**2700**
BDC-MW-6C	MW-06C-050822	N	8/22/2005	--	0.5 U	0.5 U	**510**
BDC-MW-6C	MW-06C-051114	N	11/14/2005	--	0.5 U	0.5 U	**2900**
BDC-MW-6C	MW-06C-060222	N	2/22/2006	--	12.3 U	**47.7**	**12300**
BDC-MW-6C	MW-06C-060518	N	5/18/2006	--	12 U	11 U	**15000**
BDC-MW-6C	MW-06C-060816	N	8/16/2006	--	**2.3**	1.1 U	**18900**
BDC-MW-6C	MW-06C-061129	N	11/29/2006	--	**1.4**	1.1 U	**20600**
BDC-MW-6C	MW-06C-070223	N	2/23/2007	--	**1.7**	1.1 U	**18900**
BDC-MW-6C	MW-06C-070524	N	5/24/2007	--	**2**	1.1 U	**20800**
BDC-MW-6C	MW-06C-071130	N	11/30/2007	--	**2.8**	1.1 U	**30500**
BDC-MW-6C	MW-06C-080521	N	5/21/2008	--	1.2 U	1.1 U	**23800**
BDC-MW-6C	MW-06C-081125	N	11/25/2008	--	1.2 U	1.1 U	**28700**
BDC-MW-6C	MW-06C-090520	N	5/20/2009	--	1.2 U	1.1 U	**20600**
BDC-MW-6C	MW-06C-091119	N	11/19/2009	--	1.2 U	1.1 U	**25600**
BDC-MW-9A	MW-09A-040503	N	5/3/2004	--	0.5 U	0.5 U	**8.4**
BDC-MW-9A	MW-09A-040823	N	8/23/2004	--	0.5 U	**4.2**	**4.7**
BDC-MW-9A	MW-09A-041019	N	10/19/2004	--	0.5 U	**2.7**	**17**
BDC-MW-9A	MW-09A-050221	N	2/21/2005	--	0.50 U	**1.9**	**1500**
BDC-MW-9A	MW-09A-050511	N	5/11/2005	--	0.5 U	0.5 U	**1700**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-MW-9A	MW-09A-050822	N	8/22/2005	--	0.5 U	0.5 U	**460**
BDC-MW-9A	MW-09A-051114	N	11/14/2005	--	0.5 U	0.5 U	**2600**
BDC-MW-9A	MW-09A-060221	N	2/21/2006	--	12.3 U	11.4 U	**5650**
BDC-MW-9A	MW-09A-060515	N	5/15/2006	--	12 U	11 U	**15000**
BDC-MW-9A	MW-09A-060816	N	8/16/2006	--	**2.1**	1.1 U	**16800**
BDC-MW-9A	MW-09A-061127	N	11/27/2006	--	**6.3**	**1.9**	**15200**
BDC-MW-9A	MW-09A-070222	N	2/22/2007	--	**7.8**	1.1 U	**15300**
BDC-MW-9A	MW-09A-070522	N	5/22/2007	--	**4.8**	1.1 U	**16700**
BDC-MW-9A	MW-09A-DUP-070522	FD	5/22/2007	--	1.2 U	1.1 U	**17800**
BDC-MW-9A	MW-09A-071129	N	11/29/2007	--	**24.5**	1.1 U	**27600**
BDC-MW-9A	MW-09A-080519	N	5/19/2008	--	**35.6**	**7.8**	**17100**
BDC-MW-9A	MW-09A-DUP-080519	FD	5/19/2008	--	**37.7**	**8.3**	**18900**
BDC-MW-9A	MW-09A-081124	N	11/24/2008	--	**2.1**	**4**	**13700**
BDC-MW-9A	MW-09A-DUP-081124	FD	11/24/2008	--	**2.2**	**3.9**	**14600**
BDC-MW-9A	MW-09A-090518	N	5/18/2009	--	1.2 U	1.1 U	**18100**
BDC-MW-9A	MW-09A-DUP-090518	FD	5/18/2009	--	1.2 UJ	1.1 UJ	**16800 J**
BDC-MW-9A	MW-09A-091116	N	11/16/2009	--	1.2 U	1.1 U	**16600**
BDC-MW-9A	MW-09A-100520	N	5/20/2010	--	1.2 U	1.1 U	**18700**
BDC-MW-9A	MW-09A-101110	N	11/10/2010	--	**2**	1.1 U	**24400**
BDC-MW-9A	MW-09A-110503	N	5/3/2011	--	**2**	1.1 U	**17800**
BDC-MW-9A	MW-09A-111113	N	11/13/2011	--	**1.2**	1.1 U	**11800**
BDC-MW-9A	MW-09A-120514	N	5/14/2012	--	**13**	1 U	**22000**
BDC-MW-9A	MW-09A-121114	N	11/14/2012	--	**11**	1 U	**21000**
BDC-MW-9A	MW-09A-130521	N	5/21/2013	--	**16**	1 U	**24000**
BDC-MW-9A	MW-09A-131112	N	11/12/2013	--	**10**	1 U	**18000**
BDC-MW-9A	MW-09A-140507	N	5/7/2014	--	**29**	1 U	**26000**
BDC-MW-9A	MW-09A-141105	N	11/5/2014	--	**15**	1 U	**25000**
BDC-MW-9A	MW-09A-150429	N	4/29/2015	--	**28**	1 U	**27000**
BDC-MW-9A	MW-09A-151026	N	10/26/2015	--	**49**	1 U	**21000**
BDC-MW-9A	MW-09A-160419	N	4/19/2016	--	**34**	1 U	**22000**
BDC-MW-9A	MW-9A-161101	N	11/1/2016	--	**120**	1 U	**19000**
BDC-MW-9A	MW-09A-170502	N	5/2/2017	--	**430**	1 U	**20000**
BDC-MW-9A	MW-09A-171108	N	11/8/2017	--	**230**	**51**	**21000**
BDC-MW-9A	BDC-DUP1-180501	FD	5/1/2018	1.06 U	**815 J**	**8.03 J**	**15300**
BDC-MW-9A	MW-9A-180501	N	5/1/2018	1.06 U	**575 J**	**3.54 J**	**14900**
BDC-MW-9A	BDC-DUP1-181105	FD	11/5/2018	--	**517 J**	1.14 U	**12500 J**
BDC-MW-9A	MW-9A-181105	N	11/5/2018	--	**402 J**	1.14 U	**9960 J**
BDC-MW-9A	BDC-DUP1-190501	FD	5/1/2019	--	**205**	1.14 U	**10600**
BDC-MW-9A	MW-9A-190501	N	5/1/2019	--	**247 J**	1.14 UJ	**11100 J**
BDC-MW-9A	MW-9A-191104	N	11/4/2019		**123 J**	1.14 U	**4120**
BDC-MW-9A	BDC-DUP1-191104	FD	11/4/2019		**159 J**	1.14 U	**4530**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L
BDC-MW-9B	MW-09B-040503	N	5/3/2004	--	0.5 U	0.5 U	**2.7**
BDC-MW-9B	MW-09B-040823	N	8/23/2004	--	0.5 U	**0.76**	**23**
BDC-MW-9B	MW-09B-041019	N	10/19/2004	--	0.5 U	**1.4**	**29**
BDC-MW-9B	MW-09B-050221	N	2/21/2005	--	0.50 U	**1.7**	**2000**
BDC-MW-9B	MW-09B-050511	N	5/11/2005	--	0.5 U	0.5 U	**9600**
BDC-MW-9B	MW-09B-050822	N	8/22/2005	--	0.5 U	0.5 U	**400**
BDC-MW-9B	MW-09B-051114	N	11/14/2005	--	0.5 U	0.5 U	**3100**
BDC-MW-9B	MW-09B-060221	N	2/21/2006	--	12.3 U	11.4 U	**8730**
BDC-MW-9B	MW-09B-060515	N	5/15/2006	--	12 U	11 U	**17000**
BDC-MW-9B	MW-09B-060816	N	8/16/2006	--	1.2 U	1.1 U	**19300**
BDC-MW-9B	MW-09B-061127	N	11/27/2006	--	1.2 U	1.1 U	**21800**
BDC-MW-9B	MW-09B-070222	N	2/22/2007	--	**1.6**	1.1 U	**16100**
BDC-MW-9B	MW-09B-070522	N	5/22/2007	--	**1.4**	1.1 U	**18700**
BDC-MW-9B	MW-09B-071129	N	11/29/2007	--	**3.8**	1.1 U	**29800**
BDC-MW-9B	MW-09B-080519	N	5/19/2008	--	**3**	1.1 U	**12900**
BDC-MW-9B	MW-09B-081124	N	11/24/2008	--	**17.6**	1.1 U	**27000**
BDC-MW-9B	MW-09B-090518	N	5/18/2009	--	**6.9**	1.1 U	**19700**
BDC-MW-9B	MW-09B-091116	N	11/16/2009	--	**16.1 J**	1.1 UJ	**24500 J**
BDC-MW-9C	MW-09C-040503	N	5/3/2004	--	**0.7**	**1.9**	**350**
BDC-MW-9C	MW-09C-040823	N	8/23/2004	--	**2.8**	**1.1**	**610**
BDC-MW-9C	MW-09C-041019	N	10/19/2004	--	0.5 U	**1.1**	**620**
BDC-MW-9C	MW-09C-050221	N	2/21/2005	--	**1.6**	0.50 U	**3500**
BDC-MW-9C	MW-09C-050511	N	5/11/2005	--	0.5 U	0.5 U	**2700**
BDC-MW-9C	MW-09C-050822	N	8/22/2005	--	0.5 U	0.5 U	**360**
BDC-MW-9C	MW-09C-051114	N	11/14/2005	--	0.5 U	0.5 U	**7300**
BDC-MW-9C	MW-09C-060221	N	2/21/2006	--	12.3 U	11.4 U	**10300**
BDC-MW-9C	MW-09C-060515	N	5/15/2006	--	12 U	11 U	**21000**
BDC-MW-9C	MW-09C-060816	N	8/16/2006	--	**1.6**	1.1 U	**22900**
BDC-MW-9C	MW-09C-061127	N	11/27/2006	--	**9.1**	1.1 U	**23500**
BDC-MW-9C	MW-09C-070222	N	2/22/2007	--	**3.9**	1.1 U	**17700**
BDC-MW-9C	MW-09C-070522	N	5/22/2007	--	**5.4**	1.1 U	**20600**
BDC-MW-9C	MW-09C-071129	N	11/29/2007	--	**5.4**	1.1 U	**30000**

Table D-2
Groundwater Dissolved Gases Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Acetylene	Ethane	Ethene	Methane
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-MW-9C	MW-09C-080519	N	5/19/2008	--	**15.2**	1.1 U	**22800**
BDC-MW-9C	MW-09C-081124	N	11/24/2008	--	1.2 U	1.1 U	**17700**
BDC-MW-9C	MW-09C-090518	N	5/18/2009	--	**4.3**	1.1 U	**21400**
BDC-MW-9C	MW-09C-091116	N	11/16/2009	--	**1.9 J**	1.1 UJ	**22400 J**

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Bold text indicates detected analyte

Abbreviations/Acronyms:

-- = not analyzed
µg/L = micrograms per liter
FD = field duplicate
ID = Identification
N = primary sample
N/A = not applicable

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																				
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
AOC-01/02																								
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	--	**170**	--	--	**1.6**	--	**16**	--	--	--	**12**	--	**17000**	--	5 U	--	3 U	--	**24**	--	--	**17000**
AOC-05																								
AOC5	AOC5-061709	N	6/17/2009	--	--	--	--	--	--	--	--	--	--	100 U	--	--	--	**700**	--	--	--	**2700**	--	--	--
Museum of Flight																								
MW-2	DC-MW-2-850801	N	8/1/1985	--	--	--	--	**9.0**	--	--	--	--	--	2.0 U	--	--	--	--	--	--	--	**46**	--	--	--
MW-2	DC-MW-2-951101	N	11/1/1995	--	--	--	--	**6.4**	--	--	--	--	--	11 U	--	--	--	21 U	--	--	--	**26**	--	--	--
MW-2	MW-2-970519	N	5/19/1997	--	**410**	--	--	--	--	**16**	--	--	--	**10**	--	**16000**	--	**16**	--	**70**	--	**28**	--	--	**29000**
MW-2	MW-2-980608	N	6/8/1998	--	**580**	--	--	**1.9**	--	**17**	--	--	--	**10**	--	**15000**	--	6.0 U	--	8.0 U	--	**10**	--	--	**18000**
MW-2	DC-MW-2-991101	N	11/1/1999	--	--	--	--	**1.6**	--	--	--	--	--	**12**	--	--	--	5.0 U	--	--	--	**24**	--	--	--
MW-2	DC-MW-2-000501	N	5/1/2000	--	--	--	--	**1.0**	--	--	--	1.00 U	--	2.00 U	--	--	--	5.00 U	--	--	--	2.00 U	--	--	--
MW-5	DC-MW-5-850801	N	8/1/1985	--	--	--	--	5.0 U	--	--	--	--	--	2.0 U	--	--	--	--	--	--	--	**8.0**	--	--	--
MW-5	MW-5-951101	N	11/1/1995	--	**808**	--	--	**4.8**	--	**26**	--	--	--	**11**	--	**26375**	--	21 U	--	**21**	--	11 U	--	--	**21713**
MW-5	MW-5-970519	N	5/19/1997	--	**160**	--	--	--	--	**17**	--	--	--	**9.0**	--	**29000**	--	6.0 U	--	**32**	--	**7.0**	--	--	**15000**
MW-5	MW-5-980608	N	6/8/1998	--	**55**	--	--	**2.2**	--	**19**	--	--	--	4.0 U	--	**24000**	--	**33**	--	8.0 U	--	**11**	--	--	**10000**
MW-5	DC-MW-5-991101	N	11/1/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	MW-5-991121	N	11/21/1999	--	**74**	--	--	**1.7**	--	**15**	--	--	--	5.0 U	--	**27000**	--	5.0 U	--	3.0 U	--	**23**	--	--	**16000**
SWMU-17																								
BDC-05-01	BDC-05-01-860715	N	7/15/1986	--	--	5 U	--	**15**	--	--	--	1 U	--	1 U	--	--	--	**32**	--	--	--	**50**	5 U	--	--
BDC-05-01	BDC-05-01-870311	N	3/11/1987	--	--	5 U	--	**5**	--	--	--	1 U	--	**2**	--	--	--	**6**	--	--	--	**11**	--	--	--
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U	--	--	2 U	2 U	--	--	--
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U	--	--	2 U	2 U	--	--	--
BDC-05-02	BDC-05-02-860715	N	7/15/1986	--	--	5 U	--	**18**	--	--	--	1 U	--	1 U	--	--	--	**2**	--	--	--	**5**	5 U	--	--
BDC-05-02	BDC-05-02-861118	N	11/18/1986	--	--	5 U	--	**9**	--	--	--	1 U	--	1 U	--	--	--	**8**	--	--	--	**24**	--	--	--
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	--	--	5 U	--	5 U	--	--	--	1 U	--	1 U	--	--	--	**1**	--	--	--	**5**	5 U	--	--
BDC-05-02	BDC-05-02A-870310	N	3/10/1987	--	--	5 U	--	5 U	--	--	--	1 U	--	1 U	--	--	--	**2**	--	--	--	**1**	--	--	--
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U	--	--	2 U	2 U	--	--	--
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	5 U	--	--	2 U	2 U	--	--	--
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	**87**	--	--	1.28 U	--	**25**	--	--	--	10 U	--	**24068**	--	21 U	--	**25**	--	10 U	--	--	**14443**
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	--	**110**	--	--	--	--	**16**	--	--	--	**8**	--	**23000**	--	6 U	--	**27**	--	**8**	--	--	**8300**
BDC-05-02	BDC-05-02A-980608	N	6/8/1998	--	**59**	--	--	1.5 U	--	**12**	--	--	--	**6**	--	**23000**	--	6 U	--	8 U	--	**13**	--	--	**9500**
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	--	**190**	--	--	**2.7**	--	**27**	--	--	--	5 U	--	**26000**	--	5 U	--	3 U	--	**13**	--	--	**18000**
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	--	--	--	--	1.2 U	--	--	0.18 U	--	**1**	--	--	--	1.9 U	--	--	--	**5.8**	--	--	**9400**	--
BDC-05-02	BDC-05-02A-001206	N	12/6/2000	--	**190**	--	--	--	--	**30**	--	--	--	5 U	--	**26000**	--	5 U	--	**21**	--	**16**	--	--	**18000**
BDC-05-02	BDC-05-02A-010611	N	6/11/2001	--	**170**	--	--	--	--	**13**	--	--	--	**0.6**	--	**24000**	--	2 U	--	**3.5**	--	**13**	--	--	**6000**
BDC-05-02	BDC-05-02-011203	N	12/3/2001	--	**150**	--	1.1 U	1.1 U	--	**16**	0.18 U	--	**2**	**4**	--	**26000**	**4**	2 U	--	3 U	**9**	**17**	--	**3200**	**6800**
BDC-05-02	BDC-05-02-020604	N	6/4/2002	50 U	**90**	--	50 U	50 U	**7**	**11**	--	--	2 U	2 U	**25800**	**25900**	5 U	5 U	**4**	**7**	2 U	2 U	--	**8090**	**9620**
BDC-05-02	BDC-05-02-021203	N	12/3/2002	50 U	50 U	--	50 U	50 U	**11**	**16**	--	--	2 U	2 U	**24100**	**24300**	5 U	5 U	**3**	**5**	2 U	**2**	--	**11900**	**13300**
BDC-05-02	BDC-05-02-030603	N	6/3/2003	50 U	50 U	--	1 U	1 U	**9**	**11**	--	--	2 U	2 U	**23800**	**23400**	5 U	5 U	3 U	3 U	2 U	**2**	--	**12700**	**13900**

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
AOC-01/02																							
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	--	42 U	--	**9600**	--	--	0.029 U	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	8 U
AOC-05																							
AOC5	AOC5-061709	N	6/17/2009	--	1000 U	--	--	--	--	--	--	--	--	**700**	--	--	--	200 U	--	--	--	--	**7000**
Museum of Flight																							
MW-2	DC-MW-2-850801	N	8/1/1985	--	**10**	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	**80**
MW-2	DC-MW-2-951101	N	11/1/1995	--	41 U	--	--	--	--	**0.512**	--	--	--	18 U	--	--	--	--	--	--	--	--	**25**
MW-2	MW-2-970519	N	5/19/1997	--	41 U	--	**11000**	--	--	--	--	61 U	--	**10**	--	--	--	3.0 U	--	--	--	--	19 U
MW-2	MW-2-980608	N	6/8/1998	--	41 U	--	**9300**	--	--	0.021 U	--	**100**	--	33 U	--	--	--	3.0 U	--	--	--	--	19 U
MW-2	DC-MW-2-991101	N	11/1/1999	--	42 U	--	--	--	--	0.029 U	--	--	--	**16**	--	--	--	--	--	--	--	--	8.0 U
MW-2	DC-MW-2-000501	N	5/1/2000	--	1.00 U	--	--	--	--	0.1 U	--	--	--	--	--	--	--	--	--	--	--	--	1.00 U
MW-5	DC-MW-5-850801	N	8/1/1985	--	10 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	**20**
MW-5	MW-5-951101	N	11/1/1995	--	41 U/6.2 (a)	--	**14700**	--	--	0.5 U	--	11 U	--	18 U	--	1.93 U	--	11 U	--	--	--	--	**14**
MW-5	MW-5-970519	N	5/19/1997	--	41 U	--	**15000**	--	--	--	--	61 U	--	33 U	--	--	--	3.0 U	--	--	--	--	**35**
MW-5	MW-5-980608	N	6/8/1998	--	41 U	--	**11000**	--	--	**0.042**	--	61 U	--	**130**	--	--	--	3.0 U	--	--	--	--	19 U
MW-5	DC-MW-5-991101	N	11/1/1999	--	**42**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	MW-5-991121	N	11/21/1999	--	--	--	**13000**	--	--	0.029 U	--	39 U	--	16 U	--	--	--	3.0 U	--	--	--	--	8.0 U
SWMU-17																							
BDC-05-01	BDC-05-01-860715	N	7/15/1986	--	10 U	--	--	--	--	1 U	--	--	--	**25**	5 U	5 U	--	1 U	--	5 U	--	--	**78**
BDC-05-01	BDC-05-01-870311	N	3/11/1987	--	**13**	--	--	--	--	1 U	--	--	--	**6**	--	5 U	--	1 U	--	5 U	--	--	**22**
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	--	--	--	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	--	**4**	**5**
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	--	--	--	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	--	**4**	**5**
BDC-05-02	BDC-05-02-860715	N	7/15/1986	--	10 U	--	--	--	--	1 U	--	--	--	**7**	5 U	5 U	--	1 U	--	5 U	--	--	**29**
BDC-05-02	BDC-05-02-861118	N	11/18/1986	--	10 U	--	--	--	--	1 U	--	--	--	**14**	--	5 U	--	1 U	--	5 U	--	--	**28**
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	--	10 U	--	--	--	--	1 U	--	--	--	**6**	5 U	5 U	--	1 U	--	5 U	--	--	**29**
BDC-05-02	BDC-05-02A-870310	N	3/10/1987	--	10 U	--	--	--	--	1 U	--	--	--	**6**	--	5 U	--	1 U	--	5 U	--	--	**8**
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	--	**4**	**4**
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	10 U	10 U	--	--	--	--	--	--	--	**6**	**7**
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	41 U/1.03 U (a)	--	**10793**	--	--	**0.612**	--	**14**	--	18 U	--	1.93 U	--	10 U	--	--	--	--	10 U
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	--	**85**	--	**10000**	--	--	--	--	61 U	--	33 U	--	--	--	3 U	--	--	--	--	**28**
BDC-05-02	BDC-05-02A-980608	N	6/8/1998	--	41 U	--	**11000**	--	--	0.021 U	--	61 U	--	33 U	--	--	--	3 U	--	--	--	--	19 U
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	--	42 U	--	**13000**	--	--	0.029 U	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**11**
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	--	1.9 U	--	--	**1100**	--	0.029 U	--	--	2.7 U	--	--	--	2.9 U	--	--	--	--	**3.6**	--
BDC-05-02	BDC-05-02A-001206	N	12/6/2000	--	42 U	--	**15000**	--	--	--	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**10**
BDC-05-02	BDC-05-02A-010611	N	6/11/2001	--	0.83 U	--	**13000**	--	--	--	--	1.1 U	--	**5.2**	--	--	--	3.1 U	--	--	--	--	**37**
BDC-05-02	BDC-05-02-011203	N	12/3/2001	--	**41**	--	**14000**	**320**	--	--	--	22 U	2.7 U	11 U	--	--	2.9 U	1 U	--	--	--	**13**	**12**
BDC-05-02	BDC-05-02-020604	N	6/4/2002	20 U	20 U	**16600**	**16300**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-02	BDC-05-02-021203	N	12/3/2002	20 U	20 U	**19400**	**19400**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-02	BDC-05-02-030603	N	6/3/2003	1 U	1 U	**21400**	**20600**	--	--	--	**6**	**7**	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-031119	N	11/19/2003	50 U	**80**	--	1 U	1 U	**11**	**16**	--	--	2 U	2 U	**25000**	**25100**	5 U	5 U	3 U	**3**	2 U	2 U	--	**14400**	**16700**
BDC-05-02	BDC-05-02-040429	N	4/29/2004	50 U	**60**	--	**1**	**2**	**11**	**11**	--	--	2 U	2 U	**26800**	**25200**	5 U	5 U	3 U	3 U	2 U	**3**	--	**9500**	**10100**
BDC-05-02	BDC-05-02-041018	N	10/18/2004	50 U	**80**	--	1 U	**2**	**12**	**17**	--	--	2 U	2 U	**29600**	**29000**	5 U	5 U	3 U	**5**	2 U	**2**	--	**11100**	**13300**
BDC-05-02	BDC-05-02-050510	N	5/10/2005	50 U	**60**	--	**1**	**1**	**9**	**10**	--	--	2 U	2 U	**23600**	**22400**	5 U	5 U	3 U	**3**	2 U	**3**	--	**9440**	**10800**
BDC-05-02	BDC-05-02-051116	N	11/16/2005	50 U	**70**	--	**1**	**2**	**14**	**17**	--	--	2 U	2 U	**26000**	**27700**	5 U	5 U	3 U	3 U	2 U	**3**	--	**9390**	**13200**
BDC-05-02	BDC-05-02-060515	N	5/15/2006	50 U	**100**	--	**1**	**1**	**12**	**15**	--	--	2 U	2 U	**26800**	**27700**	5 U	5 U	3 U	3 U	**2**	**4**	--	**8070**	**10600**
BDC-05-02	BDC-05-02-061120	N	11/20/2006	50 U	50 U	--	**1**	**2**	**10**	**9**	--	--	2 U	2 U	**29700**	**27300**	5 U	5 U	3 U	3 U	2 U	2 U	--	**13100**	**13300**
BDC-05-02	BDC-05-02-070521	N	5/21/2007	50 U	**50**	--	**3**	**3**	**10**	**15**	--	--	2 U	2 U	**30300**	**29700**	5 U	5 U	3 U	3 U	2 U	**6**	--	**13300**	**16200**
BDC-05-02	BDC-05-02-071126	N	11/26/2007	50 U	50 U	--	1 U	**1**	**13**	**19**	--	--	2 U	2 U	**31300**	**32400**	5 U	5 U	3 U	**3**	2 U	2 U	--	**13200**	**15600**
BDC-05-02	BDC-05-02-080522	N	5/22/2008	50 U	**90**	--	**2**	**2**	**13**	**16**	--	--	2 U	2 U	**28300**	**28000**	5 U	5 U	3 U	**3**	2 U	**4**	--	**12200**	**14400**
BDC-05-02	BDC-05-02-081023	N	10/23/2008	--	--	--	1 U	**3**	--	--	--	--	--	--	--	--	--	--	--	--	**3**	**4**	--	--	--
BDC-05-02	BDC-05-02-081120	N	11/20/2008	50 U	**710**	--	**11**	**17**	**6**	**12**	--	--	2 U	2 U	**17500**	**21800**	5 U	5 U	**11**	**14**	2 U	**30**	--	**33000**	**47600**
BDC-05-02	BDC-05-02-081216	N	12/16/2008	--	--	--	**14**	**24**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**29**	--	--	--
BDC-05-02	BDC-05-02-090116	N	1/16/2009	--	--	--	**17**	**22**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**8**	--	--	--
BDC-05-02	BDC-05-02-090211	N	2/11/2009	--	--	--	**40**	**46**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	--	--	--
BDC-05-02	BDC-05-02-090309	N	3/9/2009	--	--	--	**36**	**41**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	--	--	--
BDC-05-02	BDC-05-02-090416	N	4/16/2009	--	--	--	**25.1**	**28.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-02	BDC-05-02-090513	N	5/13/2009	**50**	**120**	--	**18.7**	**24.1**	**11**	**16**	--	--	2 U	2 U	**23800**	**24400**	5 U	5 U	**12**	**13**	2 U	**4**	--	**75300**	**77100**
BDC-05-02	BDC-05-02-090816	N	8/16/2009	--	--	--	**16.7**	**22.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**9**	--	--	--
BDC-05-02	BDC-05-02-091113	N	11/13/2009	50 U	**100**	--	**15.9**	**20.3**	**11**	**19**	--	--	2 U	2 U	**32900**	**29700**	5 U	5 U	**14**	**18**	2 U	**3**	--	**76700**	**73100**
BDC-05-02	BDC-05-02-100216	N	2/16/2010	--	--	--	**20.3**	**22.4**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**5**	--	--	--
BDC-05-02	BDC-05-02-100518	N	5/18/2010	50 U	**50**	--	**12**	**13.2**	**10**	**8**	--	--	2 U	2 U	**34900**	**33500**	5 U	5 U	**11**	**11**	2 U	2 U	--	**55100**	**60000**
BDC-05-02	BDC-05-02-100817	N	8/17/2010	--	--	--	**8**	**9.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-02	BDC-05-02-101109	N	11/9/2010	50 U	**70**	--	**5.1**	**6.3**	**10**	**9**	--	--	2 U	2 U	**34100**	**35600**	5 U	5 U	**4**	**7**	2 U	2 U	--	**28200**	**32600**
BDC-05-02	BDC-05-02-110215	N	2/15/2011	--	--	--	**5.6**	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-02	BDC-05-02-110502	N	5/2/2011	50 U	**140**	--	**7**	**8.3**	**7**	**9**	--	--	2 U	2 U	**34000**	**33600**	5 U	5 U	**6**	**8**	2 U	2 U	--	**36400**	**39900**
BDC-05-02	BDC-05-02-110731	N	7/31/2011	--	--	--	**5**	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-02	BDC-05-02-111102	N	11/2/2011	--	--	--	**22.3**	**24.9**	--	--	--	--	--	--	--	--	--	--	--	--	**10**	**10**	--	--	--
BDC-05-02	BDC-05-02-120507	N	5/7/2012	--	--	--	**486**	**50.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4.4**	--	--	--
BDC-05-02	BDC-05-02-121115	N	11/15/2012	--	--	--	**13**	**13.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	3.1 U	--	--	--
BDC-05-02	BDC-05-02-130522	N	5/22/2013	--	--	--	**4.9**	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.3**	--	--	--
BDC-05-02	BDC-05-02-131113	N	11/13/2013	--	--	--	**7.4**	**8.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-02	BDC-05-02-DUP-131113	FD	11/13/2013	--	--	--	**7.2**	**8.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.2**	--	--	--
BDC-05-02	BDC-05-02-140513	N	5/13/2014	--	--	--	**19.2**	**22.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.4**	--	--	--
BDC-05-02	BDC-05-02-141111	N	11/11/2014	--	--	--	**31.8**	**39.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.4**	--	--	--
BDC-05-02	BDC-05-02-150427	N	4/27/2015	--	--	--	**11.2**	**18**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.7**	--	--	--
BDC-05-02	BDC-05-02-DUP-150427	FD	4/27/2015	--	--	--	**10.5**	**18**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.1**	--	--	--
BDC-05-02	BDC-05-02-151028	N	10/28/2015	--	--	--	**2.1**	**1.7 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5.6**	--	--	--
BDC-05-02	BDC-05-02-160420	N	4/20/2016	--	--	--	**2.2**	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	**8.3**	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-031119	N	11/19/2003	1 U	1 U	**23500**	**23100**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**11**
BDC-05-02	BDC-05-02-040429	N	4/29/2004	1 U	1 U	**17100**	**15800**	--	--	--	5 U	**5**	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-02	BDC-05-02-041018	N	10/18/2004	1 U	1 U	**20000**	**19400**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**9**
BDC-05-02	BDC-05-02-050510	N	5/10/2005	1 U	1 U	**14200**	**13400**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**9**
BDC-05-02	BDC-05-02-051116	N	11/16/2005	1 U	1 U	**14800**	**14900**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**9**
BDC-05-02	BDC-05-02-060515	N	5/15/2006	1 U	1 U	**13200**	**13000**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-02	BDC-05-02-061120	N	11/20/2006	1 U	1 U	**16700**	**15100**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-02	BDC-05-02-070521	N	5/21/2007	1 U	1 U	**15300**	**14600**	--	--	--	**6**	**7**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**10**
BDC-05-02	BDC-05-02-071126	N	11/26/2007	1 U	1 U	**16200**	**16600**	--	0.1 U	0.1 U	**7**	**7**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-02	BDC-05-02-080522	N	5/22/2008	20 U	20 U	**13500**	**13100**	--	0.1 U	0.1 U	**5**	**5**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-02	BDC-05-02-081023	N	10/23/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-081120	N	11/20/2008	1 U	**3**	**9390**	**10100**	--	0.1 U	0.1 U	**5**	**10**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**40**
BDC-05-02	BDC-05-02-081216	N	12/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-090513	N	5/13/2009	1 U	1 U	**18500**	**16600**	--	0.1 U	0.1 U	**7**	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**20**
BDC-05-02	BDC-05-02-090816	N	8/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-091113	N	11/13/2009	1 U	1 U	**19500**	**17700**	--	0.1 U	0.1 U	5 U	5 U	10 U	**20**	--	--	3 U	3 U	--	--	--	10 U	**30**
BDC-05-02	BDC-05-02-100216	N	2/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-100518	N	5/18/2010	1 U	1 U	**18400**	**18300**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-02	BDC-05-02-100817	N	8/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-101109	N	11/9/2010	1 U	1 U	**14800**	**15300**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**10**
BDC-05-02	BDC-05-02-110215	N	2/15/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-110502	N	5/2/2011	20 U	20 U	**15400**	**14800**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-02	BDC-05-02-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-DUP-131113	FD	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-160809	N	8/9/2016	--	--	--	**11.1**	**20.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-02	BDC-05-02-161102	N	11/2/2016	--	--	--	**2.2**	**3.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-02	BDC-05-02-170207	N	2/7/2017	--	--	--	**1.8 J**	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.1**	--	--	--
BDC-05-02	BDC-05-02-170504	N	5/4/2017	--	--	--	**1.3 J**	**2.1**	--	--	--	--	--	--	--	--	--	--	--	--	**4.4**	**6.5**	--	--	--
BDC-05-02	BDC-05-02-170801	N	8/1/2017	--	--	--	**8.5**	**11.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-02	BDC-05-02-171106	N	11/6/2017	--	--	--	**11.4**	**13.4**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-02	BDC-05-02-180502	N	5/2/2018	--	--	--	**35.1**	**38.6**	--	--	--	--	--	--	--	--	--	--	--	--	50.0 U	50.0 U	--	--	--
BDC-05-02	BDC-05-02-181106	N	11/6/2018	--	--	--	**32.8**	**43.9**	--	--	--	--	--	--	--	--	--	--	--	--	10.0 U	**34.8**	--	--	--
BDC-05-02	BDC-05-02-190503	N	5/3/2019	--	--	--	**36.3**	**41.3**	--	--	--	--	--	--	--	--	--	--	--	--	10.0 U	**17.6**	--	--	--
BDC-05-02	BDC-05-02-191106	N	11/6/2019	--	--	--	**24.5**	**24.5**	--	--	--	--	--	--	--	--	--	--	--	--	10.0 U	**15.8**	--	--	--
BDC-05-03	BDC-05-03-860715	N	7/15/1986	--	--	5 U	--	**15**	--	--	--	**2**	--	**1**	--	--	--	**53**	--	--	--	**100**	5 U	--	--
BDC-05-03	BDC-05-03-861118	N	11/18/1986	--	--	5 U	--	**17**	--	--	--	**1**	--	1 U	--	--	--	**51**	--	--	--	**75**	--	--	--
BDC-05-03	BDC-05-03-870311	N	3/11/1987	--	--	5 U	--	5 U	--	--	--	1 U	--	1 U	--	--	--	**5**	--	--	--	**5**	--	--	--
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	2 U	--	--	--
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	2 U	--	--	--
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	**1321**	--	--	**9.6**	--	**37**	--	--	--	**11**	--	**27074**	--	21 U	--	**49**	--	**12**	--	--	**53447**
BDC-05-03	BDC-05-03-991122	N	11/22/1999	--	**380**	--	--	**3.2**	--	**17**	--	--	--	**12**	--	**22000**	--	5 U	--	**11**	--	**12**	--	--	**19000**
BDC-05-03	BDC-05-03-000531	N	5/31/2000	--	--	--	--	**2.6**	--	--	0.18 U	--	**1.7**	--	--	--	**3.1**	--	--	--	**10**	--	--	**17000**	--
BDC-05-03	BDC-05-03-001206	N	12/6/2000	--	**660**	--	--	--	--	**24**	--	--	--	5 U	--	**23000**	--	5 U	--	**10**	--	**25**	--	--	**25000**
BDC-05-03	BDC-05-03-010611	N	6/11/2001	--	**3000**	--	--	--	--	**33**	--	--	--	**1.3**	--	**20000**	--	**3.3**	--	**2.7**	--	**44**	--	--	**19000**
BDC-05-03	BDC-05-03-011203	N	12/3/2001	--	**310**	--	1.1 U	1.1 U	--	**13**	0.18 U	--	**2**	**11**	--	**19000**	1.9 U	2 U	--	3 U	**67**	**24**	--	**4200**	**4800**
BDC-05-03	BDC-05-03-SPLIT-011203	N	12/3/2001	50 U	**250**	--	50 U	50 U	**11**	**12**	--	--	2 U	2 U	**20800**	**18700**	5 U	5 U	3 U	3 U	2 U	**2**	--	**4330**	**4980**
BDC-05-03	BDC-05-03-020604	N	6/4/2002	50 U	**240**	--	50 U	50 U	**7**	**9**	--	--	2 U	2 U	**20900**	**19600**	5 U	5 U	3 U	3 U	2 U	2 U	--	**6440**	**8690**
BDC-05-03	BDC-05-03-021203	N	12/3/2002	50 U	**330**	--	50 U	50 U	**9**	**12**	--	--	2 U	2 U	**21100**	**21100**	5 U	5 U	3 U	3 U	2 U	**3**	--	**14700**	**18800**
BDC-05-03	BDC-05-03-030603	N	6/3/2003	50 U	**410**	--	1 U	**4**	**8**	**12**	--	--	2 U	2 U	**23200**	**23100**	5 U	5 U	3 U	3 U	2 U	**4**	--	**12100**	**17400**
BDC-05-03	BDC-05-03-031119	N	11/19/2003	50 U	**250**	--	1 U	1 U	**10**	**12**	--	--	2 U	2 U	**26000**	**25200**	5 U	5 U	3 U	3 U	2 U	**2**	--	**16800**	**18600**
BDC-05-03	BDC-05-03-040429	N	4/29/2004	50 U	**180**	--	1 U	**2**	**7**	**10**	--	--	2 U	2 U	**25600**	**23700**	5 U	5 U	3 U	3 U	2 U	**3**	--	**12500**	**13900**
BDC-05-03	BDC-05-03-041018	N	10/18/2004	50 U	**240**	--	1 U	**2**	**8**	**12**	--	--	2 U	2 U	**23400**	**23600**	5 U	5 U	3 U	3 U	2 U	**3**	--	**13700**	**16800**
BDC-05-03	BDC-05-03-050510	N	5/10/2005	50 U	50 U	--	1 U	1 U	**6**	**62**	--	--	2 U	2 U	**23100**	**55400**	5 U	5 U	3 U	**5**	2 U	**3**	--	**4170**	**1990**
BDC-05-03	BDC-05-03-051116	N	11/16/2005	50 U	**340**	--	1 U	**2**	**9**	**13**	--	--	2 U	2 U	**21100**	**22000**	5 U	5 U	3 U	**3**	2 U	**4**	--	**6900**	**12300**
BDC-05-03	BDC-05-03-060515	N	5/15/2006	50 U	**1660**	--	1 U	**7**	**8**	**24**	--	--	2 U	2 U	**21800**	**22500**	5 U	5 U	**3**	**8**	**3**	**10**	--	**3580**	**25400**
BDC-05-03	BDC-05-03-061120	N	11/20/2006	50 U	**110**	--	1 U	**2**	**10**	**10**	--	--	2 U	2 U	**24200**	**21300**	5 U	5 U	3 U	**3**	**3**	**2**	--	**3390**	**6980**
BDC-05-03	BDC-05-03-070521	N	5/21/2007	50 U	**590**	--	**2**	**3**	**7**	**11**	--	--	2 U	2 U	**26100**	**24900**	5 U	5 U	3 U	3 U	2 U	**4**	--	**10500**	**14500**
BDC-05-03	BDC-05-03-071126	N	11/26/2007	50 U	**130**	--	1 U	**2**	**9**	**13**	--	--	2 U	2 U	**24600**	**24100**	5 U	5 U	3 U	3 U	2 U	**2**	--	**15100**	**18400**
BDC-05-03	BDC-05-03-080522	N	5/22/2008	50 U	**170**	--	**1**	**2**	**11**	**9**	--	--	2 U	2 U	**25200**	**24900**	5 U	5 U	3 U	3 U	2 U	**2**	--	**16000**	**18100**
BDC-05-03	BDC-05-03-081023	N	10/23/2008	--	--	--	1 U	**4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	--	--	--
BDC-05-03	BDC-05-03-081120	N	11/20/2008	50 U	**200**	--	1 U	**3**	**10**	**15**	--	--	2 U	2 U	**23000**	**23200**	5 U	5 U	3 U	3 U	2 U	**3**	--	**8010**	**15800**
BDC-05-03	BDC-05-03-081216	N	12/16/2008	--	--	--	1 U	**1**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**3**	--	--	--
BDC-05-03	BDC-05-03-090116	N	1/16/2009	--	--	--	1 U	**1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																		
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-860715	N	7/15/1986	--	10 U	--	--	--	--	1 U	--	--	--	**46**	5 U	5 U	--	1 U	--	5 U	--	--	**130**
BDC-05-03	BDC-05-03-861118	N	11/18/1986	--	10 U	--	--	--	--	1 U	--	--	--	**45**	--	5 U	--	1 U	--	5 U	--	--	**120**
BDC-05-03	BDC-05-03-870311	N	3/11/1987	--	10 U	--	--	--	--	1 U	--	--	--	**2**	--	5 U	--	1 U	--	5 U	--	--	**11**
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	**4**
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	**4**
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	41 U/2.2 (a)	--	**12106**	--	--	**0.54**	--	11 U	--	18 U	--	1.93 U	--	11 U	--	--	--	--	11 U
BDC-05-03	BDC-05-03-991122	N	11/22/1999	--	42 U	--	**9600**	--	--	0.029 U	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**11**
BDC-05-03	BDC-05-03-000531	N	5/31/2000	--	1.9 U	--	--	**440**	--	0.029 U	--	--	2.7 U	--	--	--	2.9 U	--	--	--	--	**9.3**	--
BDC-05-03	BDC-05-03-001206	N	12/6/2000	--	42 U	--	**10000**	--	--	--	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**17**
BDC-05-03	BDC-05-03-010611	N	6/11/2001	--	**1.3**	--	**7700**	--	--	--	--	1.1 U	--	**8.3**	--	--	--	3.1 U	--	--	--	--	**41**
BDC-05-03	BDC-05-03-011203	N	12/3/2001	--	27 U	--	**6900**	**270**	--	--	--	22 U	2.7 U	11 U	--	--	2.9 U	1 U	--	--	--	**23**	6 U
BDC-05-03	BDC-05-03-SPLIT-011203	N	12/3/2001	20 U	20 U	**7810**	**6860**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-03	BDC-05-03-020604	N	6/4/2002	20 U	20 U	**8710**	**8110**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-03	BDC-05-03-021203	N	12/3/2002	20 U	20 U	**9670**	**9380**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-03	BDC-05-03-030603	N	6/3/2003	1 U	1 U	**9840**	**9570**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-03	BDC-05-03-031119	N	11/19/2003	**1**	1 U	**12200**	**11500**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**9**
BDC-05-03	BDC-05-03-040429	N	4/29/2004	1 U	1 U	**11000**	**10100**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-03	BDC-05-03-041018	N	10/18/2004	1 U	1 U	**10500**	**10300**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-03	BDC-05-03-050510	N	5/10/2005	1 U	1 U	**9050**	**36300**	--	--	--	5 U	**7**	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-03	BDC-05-03-051116	N	11/16/2005	1 U	1 U	**8130**	**8230**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**7**
BDC-05-03	BDC-05-03-060515	N	5/15/2006	1 U	1 U	**8860**	**8770**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**9**
BDC-05-03	BDC-05-03-061120	N	11/20/2006	1 U	1 U	**8990**	**7710**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**9**
BDC-05-03	BDC-05-03-070521	N	5/21/2007	1 U	1 U	**13500**	**10600**	--	--	--	**6**	**5**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-071126	N	11/26/2007	1 U	1 U	**10800**	**10200**	--	**0.1**	0.1 U	**5**	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-080522	N	5/22/2008	20 U	20 U	**11200**	**10800**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-081023	N	10/23/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-081120	N	11/20/2008	1 U	1 U	**9010**	**8710**	--	0.1 U	0.1 U	**8**	**5**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-081216	N	12/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-090211	N	2/11/2009	--	--	--	1 U	**2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-03	BDC-05-03-090309	N	3/9/2009	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-03	BDC-05-03-090416	N	4/16/2009	--	--	--	**1.9**	**0.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-03	BDC-05-03-090513	N	5/13/2009	50 U	**380**	--	**0.4**	**1.1**	**8**	**11**	--	--	2 U	2 U	**23200**	**25700**	**7**	5 U	3 U	3 U	2 U	**4**	--	**9440**	**11800**
BDC-05-03	BDC-05-03-090816	N	8/16/2009	--	--	--	**0.7**	**1.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-03	BDC-05-03-091113	N	11/13/2009	50 U	**230**	--	**0.7**	**1.9**	**8**	**15**	--	--	2 U	2 U	**24200**	**23300 J**	5 U	5 U	3 U	**4**	2 U	**3**	--	**12100**	**16300**
BDC-05-03	BDC-05-03-100216	N	2/16/2010	--	--	--	**0.4**	**1.6**	--	--	--	--	--	--	--	--	--	--	--	--	**5**	**5**	--	--	--
BDC-05-03	BDC-05-03-100518	N	5/18/2010	50 U	**320**	--	**0.5**	**1.6**	**8**	**10**	--	--	2 U	2 U	**27100**	**25700**	5 U	5 U	3 U	3 U	**3**	**4**	--	**2920**	**6610**
BDC-05-03	BDC-05-03-100817	N	8/17/2010	--	--	--	**1.2**	**2.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-03	BDC-05-03-101109	N	11/9/2010	50 U	**180**	--	**0.5**	**1.3**	**12**	**12**	--	--	2 U	2 U	**25400**	**25800**	5 U	5 U	3 U	3 U	2 U	**3**	--	**7490**	**10000**
BDC-05-03	BDC-05-03-110215	N	2/15/2011	--	--	--	**0.3**	**1.1**	--	--	--	--	--	--	--	--	--	--	--	--	**3**	**5**	--	--	--
BDC-05-03	BDC-05-03-110502	N	5/2/2011	50 U	**320**	--	**0.4**	**1.9**	**8**	**10**	--	--	2 U	2 U	**19300**	**18200**	5 U	5 U	3 U	3 U	**3**	**5**	--	**60**	**4490**
BDC-05-03	BDC-05-03-111102	N	11/2/2011	--	--	--	**16.5**	**18.4**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**4**	--	--	--
BDC-05-03	BDC-05-03-120506	N	5/6/2012	--	--	--	**4**	**1.9 J**	--	--	--	--	--	--	--	--	--	--	--	--	**9.8**	**3.2**	--	--	--
BDC-05-03	BDC-05-03-121115	N	11/15/2012	--	--	--	**7.3**	**7.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.2**	--	--	--
BDC-05-03	BDC-05-03-130522	N	5/22/2013	--	--	--	**2.5**	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-03	BDC-05-03-131113	N	11/13/2013	--	--	--	**0.82 J**	**8.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.4**	--	--	--
BDC-05-03	BDC-05-03-140513	N	5/13/2014	--	--	--	0.78 U	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.4**	--	--	--
BDC-05-03	BDC-05-03-DUP-140513	FD	5/13/2014	--	--	--	**1.1 J**	**2.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.3**	--	--	--
BDC-05-03	BDC-05-03-141110	N	11/10/2014	--	--	--	**1.2 J**	**1.8 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.7**	--	--	--
BDC-05-03	BDC-05-03-150427	N	4/27/2015	--	--	--	**2.6**	**2 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.8**	--	--	--
BDC-05-03	BDC-05-03-151028	N	10/28/2015	--	--	--	**6.2**	**11.8**	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	**8.8**	--	--	--
BDC-05-03	BDC-05-03-160420	N	4/20/2016	--	--	--	**2.3**	**1.9 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.3**	--	--	--
BDC-05-03	BDC-05-03-161103	N	11/3/2016	--	--	--	**5.8**	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-03	BDC-05-03-170504	N	5/4/2017	--	--	--	0.4 U	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.7**	--	--	--
BDC-05-03	BDC-05-03-171106	N	11/6/2017	--	--	--	**9.2**	**11.8**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	**4.7**	--	--	--
BDC-05-03	BDC-05-03-180502	N	5/2/2018	--	--	--	**18.5**	**27.2**	--	--	--	--	--	--	--	--	--	--	--	--	50.0 U	50.0 U	--	--	--
BDC-05-03	BDC-05-03-181106	N	11/6/2018	--	--	--	**17.8**	**29.2**	--	--	--	--	--	--	--	--	--	--	--	--	**3.69**	**45.7**	--	--	--
BDC-05-03	BDC-05-03-190502	N	5/2/2019	--	--	--	**26.3**	**33.5**	--	--	--	--	--	--	--	--	--	--	--	--	**8.05**	**45.4**	--	--	--
BDC-05-03	BDC-05-03-191106	N	11/6/2019	--	--	--	**10.4**	**15.8**	--	--	--	--	--	--	--	--	--	--	--	--	**3.87 J**	**39.4**	--	--	--
BDC-05-04	BDC-05-04-870204	N	2/4/1987	--	--	5 U	--	**14**	--	--	--	1 U	--	1 U	--	--	--	1 U	--	--	--	**6**	5 U	--	--
BDC-05-04	BDC-05-04-870310	N	3/10/1987	--	--	5 U	--	**8**	--	--	--	1 U	--	1 U	--	--	--	**2**	--	--	--	**1**	--	--	--
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	**187**	--	--	**8.4**	--	**21**	--	--	--	11 U	--	**24486**	--	21 U	--	**26**	--	11 U	--	--	**30017**
BDC-05-04	BDC-05-04-970519	N	5/19/1997	--	**240**	--	--	--	--	**21**	--	--	--	**6**	--	**28000**	--	6 U	--	**95**	--	**5**	--	--	**38000**
BDC-05-04	BDC-05-04-980608	N	6/8/1998	--	**82**	--	--	**19**	--	**25**	--	--	--	**28**	--	**29000**	--	6 U	--	8 U	--	**11**	--	--	**35000**
BDC-05-04	BDC-05-04-991122	N	11/22/1999	--	**39**	--	--	**47**	--	**41**	--	--	--	**7**	--	**29000**	--	5 U	--	3 U	--	3 U	--	--	**57000**
BDC-05-04	BDC-05-04-000531	N	5/31/2000	--	--	--	--	**22**	--	--	0.18 U	--	**2.8**	--	--	--	**3.6**	--	--	--	**18**	--	--	**31000**	--
BDC-05-04	BDC-05-04-001206	N	12/6/2000	--	**90**	--	--	--	--	**41**	--	--	--	5 U	--	**23000**	--	5 U	--	3 U	--	**15**	--	--	**73000**
BDC-05-04	BDC-05-04-010611	N	6/11/2001	--	**140**	--	--	--	--	**63**	--	--	--	**4**	--	**25000**	--	**2.6**	--	**1.7**	--	**13**	--	--	**61000**

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-090513	N	5/13/2009	1 U	1 U	**9520**	**9940**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-090816	N	8/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-091113	N	11/13/2009	1 U	1 U	**10200**	**8660**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-100216	N	2/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-100518	N	5/18/2010	1 U	1 U	**10000**	**9100**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-100817	N	8/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-101109	N	11/9/2010	1 U	1 U	**9790**	**8710**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-110215	N	2/15/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-110502	N	5/2/2011	20 U	20 U	**63400**	**5780**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-03	BDC-05-03-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-DUP-140513	FD	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-870204	N	2/4/1987	--	10 U	--	--	--	--	1 U	--	--	--	**3**	5 U	5 U	--	1 U	--	5 U	--	--	**34**
BDC-05-04	BDC-05-04-870310	N	3/10/1987	--	10 U	--	--	--	--	1 U	--	--	--	2 U	--	5 U	--	1 U	--	5 U	--	--	**8**
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	41 U/2.4 (a)	--	**13558**	--	--	**0.588**	--	11 U	--	18 U	--	1.93 U	--	11 U	--	--	--	--	11 U
BDC-05-04	BDC-05-04-970519	N	5/19/1997	--	41 U	--	**13000**	--	--	--	--	61 U	--	33 U	--	--	--	3 U	--	--	--	--	**27**
BDC-05-04	BDC-05-04-980608	N	6/8/1998	--	41 U	--	**13000**	--	--	0.021 U	--	61 U	--	33 U	--	--	--	3 U	--	--	--	--	19 U
BDC-05-04	BDC-05-04-991122	N	11/22/1999	--	42 U	--	**13000**	--	--	0.029 U	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**12**
BDC-05-04	BDC-05-04-000531	N	5/31/2000	--	1.9 U	--	--	**1700**	--	0.029 U	--	--	2.7 U	--	--	--	2.9 U	--	--	--	--	**5.1**	--
BDC-05-04	BDC-05-04-001206	N	12/6/2000	--	42 U	--	**9900**	--	--	--	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**24**
BDC-05-04	BDC-05-04-010611	N	6/11/2001	--	**1.5**	--	**9900**	--	--	--	--	1.1 U	--	**19**	--	--	--	3.1 U	--	--	--	--	**39**

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-011203	N	12/3/2001	--	**110**	--	1.1 U	**29**	--	**22**	0.18 U	--	**1**	**17**	--	**23000**	1.9 U	**3**	--	3 U	**6**	**17**	--	**1700**	**43000**
BDC-05-04	BDC-05-04-020604	N	6/4/2002	50 U	50 U	--	50 U	50 U	**5**	**13**	--	--	2 U	2 U	**23800**	**23900**	5 U	5 U	3 U	3 U	2 U	2 U	--	**3920**	**22500**
BDC-05-04	BDC-05-04-021203	N	12/3/2002	50 U	50 U	--	50 U	50 U	**5**	**14**	--	--	2 U	2 U	**22800**	**22600**	5 U	5 U	3 U	3 U	2 U	2 U	--	**9230**	**26300**
BDC-05-04	BDC-05-04-030603	N	6/3/2003	50 U	50 U	--	1 U	**11**	**6**	**14**	--	--	2 U	2 U	**21700**	**22500**	5 U	5 U	3 U	3 U	2 U	2 U	--	**3200**	**15400**
BDC-05-04	BDC-05-04-031119	N	11/19/2003	50 U	50 U	--	**1**	**18**	**5**	**19**	--	--	2 U	2 U	**28300**	**27000**	5 U	5 U	3 U	3 U	2 U	2 U	--	**6910**	**26300**
BDC-05-04	BDC-05-04-040429	N	4/29/2004	50 U	50 U	--	**1**	**19**	**6**	**27**	--	--	2 U	2 U	**18800**	**19600**	5 U	5 U	3 U	3 U	2 U	2 U	--	**1700**	**22900**
BDC-05-04	BDC-05-04-041018	N	10/18/2004	50 U	50 U	--	1 U	**16**	**8**	**18**	--	--	2 U	2 U	**24300**	**23700**	5 U	5 U	3 U	3 U	2 U	2 U	--	**3520**	**20100**
BDC-05-04	BDC-05-04-050510	N	5/10/2005	50 U	**290**	--	1 U	**8**	**5**	**13**	--	--	2 U	2 U	**23300**	**22500**	5 U	5 U	3 U	3 U	2 U	**4**	--	**3140**	**12000**
BDC-05-04	BDC-05-04-051116	N	11/16/2005	50 U	**110**	--	**1**	**18**	**6**	**19**	--	--	2 U	2 U	**20500**	**22200**	5 U	5 U	3 U	3 U	2 U	2 U	--	**3230**	**21200**
BDC-05-04	BDC-05-04-060515	N	5/15/2006	50 U	**90**	--	1 U	**18**	**6**	**18**	--	--	2 U	2 U	**15500**	**16300**	5 U	5 U	3 U	3 U	2 U	**2**	--	**2540**	**24000**
BDC-05-04	BDC-05-04-061120	N	11/20/2006	50 U	50 U	--	1 U	**2**	**7**	**7**	--	--	2 U	2 U	**23800**	**20800**	5 U	5 U	3 U	3 U	2 U	2 U	--	**4760**	**5680**
BDC-05-04	BDC-05-04-070521	N	5/21/2007	50 U	**50**	--	**2**	**18**	**6**	**13**	--	--	2 U	2 U	**15100**	**15500**	5 U	5 U	3 U	3 U	2 U	2 U	--	**1860**	**11500**
BDC-05-04	BDC-05-04-071126	N	11/26/2007	50 U	50 U	--	1 U	**9**	**8**	**15**	--	--	2 U	2 U	**20800**	**19800**	5 U	5 U	3 U	3 U	2 U	2 U	--	**2680**	**11000**
BDC-05-04	BDC-05-04-080522	N	5/22/2008	50 U	**90**	--	1 U	**18**	**7**	**19**	--	--	2 U	2 U	**12800**	**13000**	5 U	5 U	3 U	3 U	2 U	2 U	--	**690**	**17600**
BDC-05-04	BDC-05-04-081023	N	10/23/2008	--	--	--	1 U	**9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-081120	N	11/20/2008	50 U	**60**	--	1 U	**19**	**8**	**15**	--	--	2 U	2 U	**18600**	**18100**	5 U	5 U	3 U	3 U	2 U	2 U	--	**2550**	**18900**
BDC-05-04	BDC-05-04-081216	N	12/16/2008	--	--	--	1 U	**19**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-04	BDC-05-04-090116	N	1/16/2009	--	--	--	1 U	**17**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-090211	N	2/11/2009	--	--	--	1 U	**20**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-090309	N	3/9/2009	--	--	--	**1**	**14**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-04	BDC-05-04-090416	N	4/16/2009	--	--	--	**1**	**10.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-090513	N	5/13/2009	**50**	**70**	--	**0.9**	**7.2**	**5**	**10**	--	--	2 U	2 U	**17600**	**16500**	**5**	5 U	3 U	3 U	2 U	**2**	--	**6150**	**11000**
BDC-05-04	BDC-05-04-090816	N	8/16/2009	--	--	--	**0.6**	**12.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-04	BDC-05-04-091113	N	11/13/2009	50 U	50 U	--	**1.3**	**4.6**	**7**	**9**	--	--	2 U	2 U	**19500**	**16500**	5 U	5 U	3 U	3 U	2 U	2 U	--	**10300**	**12800**
BDC-05-04	BDC-05-04-100216	N	2/16/2010	--	--	--	**1.6**	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**12**	--	--	--
BDC-05-04	BDC-05-04-100518	N	5/18/2010	50 U	**130**	--	**1.3**	**13.6**	**10**	**17**	--	--	2 U	2 U	**15200**	**14200**	5 U	5 U	3 U	3 U	2 U	**5**	--	**7190**	**26900**
BDC-05-04	BDC-05-04-100817	N	8/17/2010	--	--	--	**2**	**12**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**6**	--	--	--
BDC-05-04	BDC-05-04-101109	N	11/9/2010	50 U	50 U	--	**4.1**	**7.5**	**13**	**11**	--	--	2 U	2 U	**20600**	**19300**	5 U	5 U	3 U	3 U	2 U	2 U	--	**23800**	**30100**
BDC-05-04	BDC-05-04-110215	N	2/15/2011	--	--	--	**4.4**	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-110502	N	5/2/2011	50 U	**70**	--	**3.7**	**8**	**11**	**14**	--	--	2 U	2 U	**20000**	**19300**	5 U	5 U	3 U	3 U	2 U	2 U	--	**22900**	**29000**
BDC-05-04	BDC-05-04-111102	N	11/2/2011	--	--	--	**5.5**	**7.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-120507	N	5/7/2012	--	--	--	**15.8**	**17.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-121116	N	11/16/2012	--	--	--	**9.5**	**11.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.2**	--	--	--
BDC-05-04	BDC-05-04-130523	N	5/23/2013	--	--	--	**26.5**	**26.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-131113	N	11/13/2013	--	--	--	**15.1**	**16.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.2**	--	--	--
BDC-05-04	BDC-05-04-140513	N	5/13/2014	--	--	--	**2.2**	**1.7 J**	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	**4.7**	--	--	--
BDC-05-04	BDC-05-04-141111	N	11/11/2014	--	--	--	**4**	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-150427	N	4/27/2015	--	--	--	**1.3 J**	**3.9**	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	**4.6**	--	--	--
BDC-05-04	BDC-05-04-151028	N	10/28/2015	--	--	--	**7**	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-011203	N	12/3/2001	--	27 U	--	**9000**	**990**	--	--	--	**52**	2.7 U	11 U	--	--	2.9 U	1 U	--	--	--	0.35 U	6 U
BDC-05-04	BDC-05-04-020604	N	6/4/2002	20 U	20 U	**10700**	**10400**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-04	BDC-05-04-021203	N	12/3/2002	20 U	20 U	**10000**	**9700**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-04	BDC-05-04-030603	N	6/3/2003	1 U	1 U	**8940**	**9130**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-04	BDC-05-04-031119	N	11/19/2003	1 U	1 U	**11800**	**11100**	--	--	--	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	**13**
BDC-05-04	BDC-05-04-040429	N	4/29/2004	1 U	1 U	**7700**	**7490**	--	--	--	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	**8**
BDC-05-04	BDC-05-04-041018	N	10/18/2004	1 U	1 U	**10300**	**9640**	--	--	--	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	**6**
BDC-05-04	BDC-05-04-050510	N	5/10/2005	1 U	**8**	**10600**	**10200**	--	--	--	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	**24**
BDC-05-04	BDC-05-04-051116	N	11/16/2005	1 U	**2**	**8690**	**8870**	--	--	--	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	**13**
BDC-05-04	BDC-05-04-060515	N	5/15/2006	1 U	1 U	**7000**	**6940**	--	--	--	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	**8**
BDC-05-04	BDC-05-04-061120	N	11/20/2006	1 U	1 U	**10800**	**9090**	--	--	--	5 U	5 U	**10**	10 U	--	--	3 U	3 U	--	--	--	6 U	**7**
BDC-05-04	BDC-05-04-070521	N	5/21/2007	1 U	**1**	**6870**	**6770**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-071126	N	11/26/2007	1 U	1 U	**11500**	**8820**	--	0.1 U	0.1 U	**5**	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-080522	N	5/22/2008	20 U	20 U	**5740**	**5570**	--	0.1 U	0.1 U	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-081023	N	10/23/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-081120	N	11/20/2008	1 U	1 U	**8940**	**8460**	--	0.1 U	0.1 U	**6**	**6**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-081216	N	12/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-090513	N	5/13/2009	1 U	1 U	**8200**	**7500**	--	0.1 U	0.1 U	5 U	5 U	**10**	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-090816	N	8/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-091113	N	11/13/2009	1 U	1 U	**9010**	**7540**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-100216	N	2/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-100518	N	5/18/2010	1 U	1 U	**6660**	**6050**	--	0.1 U	0.1 U	5 U	5 U	**10**	**20**	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-100817	N	8/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-101109	N	11/9/2010	1 U	1 U	**9340**	**8180**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-110215	N	2/15/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-110502	N	5/2/2011	20 U	20 U	**8730**	**8350**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-04	BDC-05-04-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-160421	N	4/21/2016	--	--	--	**1.3 J**	**2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.9**	**4.2**	--	--	--
BDC-05-04	BDC-05-04-161102	N	11/2/2016	--	--	--	**7.9**	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-04	BDC-05-04-170503	N	5/3/2017	--	--	--	**0.71 J**	**1.1 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.9**	**3.4**	--	--	--
BDC-05-04	BDC-05-04-171106	N	11/6/2017	--	--	--	**9.7**	**11.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-04	BDC-05-04-180502	N	5/2/2018	--	--	--	**7.22**	**12.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.0 U	10.0 U	--	--	--
BDC-05-04	BDC-05-04-181107	N	11/7/2018	--	--	--	**10.8**	**13.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.00 U	**3.42**	--	--	--
BDC-05-04	BDC-05-04-190503	N	5/3/2019	--	--	--	**11.8**	**15.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**5.61**	--	--	--
BDC-05-04	BDC-05-04-191106	N	11/6/2019	--	--	--	**12.2**	**16.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**4.22**	--	--	--
BDC-05-05	BDC-05-05-870204	N	2/4/1987	--	--	5 U	--	5 U	--	--	--	1 U	--	1 U	--	--	--	1 U	--	--	--	**4**	5 U	--	--
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	**3155**	--	--	**20.6**	--	**39**	--	--	--	10 U	--	**26166**	--	21 U	--	**169**	--	**20**	--	--	**26048**
BDC-05-05	BDC-05-05-970519	N	5/19/1997	--	**490**	--	--	--	--	**5**	--	--	--	4 U	--	**16000**	--	6 U	--	**9**	--	**28**	--	--	**1300**
BDC-05-05	BDC-05-05-980608	N	6/8/1998	--	**620**	--	--	**3.4**	--	**21**	--	--	--	**6**	--	**30000**	--	6 U	--	**48**	--	**18**	--	--	**3800**
BDC-05-05	BDC-05-05-991122	N	11/22/1999	--	**270**	--	--	**3.7**	--	**14**	--	--	--	**9**	--	**29000**	--	5 U	--	**17**	--	**21**	--	--	**4600**
BDC-05-05	BDC-05-5-000501	N	5/1/2000	--	--	--	--	--	--	--	--	0.18 U	--	**0.49**	--	--	--	**2.5**	--	--	--	**34**	--	--	--
BDC-05-05	BDC-05-05-000531	N	5/31/2000	--	--	--	--	**1.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-001206	N	12/6/2000	--	**630**	--	--	--	--	**21**	--	--	--	**9**	--	**33000**	--	5 U	--	**29**	--	**26**	--	--	**8200**
BDC-05-05	BDC-05-05-010611	N	6/11/2001	--	**420**	--	--	--	--	**16**	--	--	--	**0.5**	--	**33000**	--	2 U	--	**15**	--	**16**	--	--	**4000**
BDC-05-05	BDC-05-05-011203	N	12/3/2001	--	**430**	--	1.1 U	**3.1**	--	**17**	0.18 U	--	**1**	2 U	--	**39000**	1.9 U	2 U	--	3 U	**12**	**18**	--	**120**	**3600**
BDC-05-05	BDC-05-05-SPLIT-011203	N	12/3/2001	50 U	**330**	--	50 U	50 U	**10**	**15**	--	--	2 U	2 U	**40700**	**38600**	5 U	5 U	3 U	**11**	2 U	**4**	--	**70**	**3380**
BDC-05-05	BDC-05-05-020604	N	6/4/2002	50 U	**36**	--	50 U	50 U	**11**	**17**	--	--	2 U	2 U	**44900**	**43000**	5 U	5 U	3 U	**20**	2 U	**3**	--	50 U	**5230**
BDC-05-05	BDC-05-05-021203	N	12/3/2002	50 U	**160**	--	50 U	50 U	**12**	**17**	--	--	2 U	2 U	**40600**	**41900**	5 U	5 U	**5**	**15**	**2**	**4**	--	**510**	**3500**
BDC-05-05	BDC-05-05-030603	N	6/3/2003	50 U	**140**	--	1 U	**2**	**9**	**14**	--	--	2 U	2 U	**38200**	**37900**	5 U	5 U	3 U	**15**	**7**	**4**	--	50 U	**2420**
BDC-05-05	BDC-05-05-031119	N	11/19/2003	50 U	**100**	--	1 U	**1**	**8**	**12**	--	--	2 U	2 U	**34100**	**34500**	5 U	5 U	3 U	**10**	2 U	**3**	--	**180**	**2770**
BDC-05-05	BDC-05-05-040429	N	4/29/2004	50 U	**130**	--	1 U	**3**	**8**	**12**	--	--	2 U	2 U	**37700**	**33700**	5 U	5 U	3 U	**22**	2 U	**4**	--	50 U	**2840**
BDC-05-05	BDC-05-05-041018	N	10/18/2004	50 U	**500**	--	1 U	**7**	**11**	**21**	--	--	2 U	2 U	**41900**	**40300**	5 U	5 U	**7**	**38**	2 U	**6**	--	**320**	**8230**
BDC-05-05	BDC-05-05-050510	N	5/10/2005	50 U	**160**	--	1 U	**3**	**6**	**11**	--	--	2 U	2 U	**38100**	**35200**	5 U	5 U	3 U	**10**	2 U	**5**	--	50 U	**3400**
BDC-05-05	BDC-05-05-051116	N	11/16/2005	50 U	**240**	--	1 U	**6**	**8**	**18**	--	--	2 U	2 U	**34800**	**36000**	**83**	5 U	3 U	**29**	**4**	**7**	--	**260**	**6710**
BDC-05-05	BDC-05-05-060515	N	5/15/2006	50 U	**950**	--	1 U	**9**	**10**	**35**	--	--	2 U	2 U	**39200**	**42600**	5 U	5 U	3 U	**84**	**2**	**14**	--	**70**	**17000**
BDC-05-05	BDC-05-05-061120	N	11/20/2006	50 U	50 U	--	1 U	**1**	**7**	**7**	--	--	2 U	2 U	**26200**	**23900**	5 U	5 U	3 U	3 U	**2**	2 U	--	**80**	**1130**
BDC-05-05	BDC-05-05-070521	N	5/21/2007	50 U	**90**	--	**1**	**2**	**3**	**6**	--	--	2 U	2 U	**18600**	**18900**	5 U	5 U	3 U	**8**	2 U	**3**	--	50 U	**1150**
BDC-05-05	BDC-05-05-071126	N	11/26/2007	50 U	**140**	--	1 U	1 U	**4**	**9**	--	--	2 U	2 U	**17900**	**18600**	5 U	5 U	3 U	**13**	2 U	2 U	--	50 U	**2250**
BDC-05-05	BDC-05-05-080522	N	5/22/2008	50 U	**150**	--	1 U	**2**	**8**	**10**	--	--	2 U	2 U	**29700**	**30000**	5 U	5 U	3 U	**13**	**3**	**3**	--	50 U	**1520**
BDC-05-05	BDC-05-05-081120	N	11/20/2008	50 U	**490**	--	1 U	**5**	**7**	**15**	--	--	2 U	2 U	**31400**	**38900**	5 U	5 U	3 U	**25**	2 U	**5**	--	**200**	**6730**
BDC-05-05	BDC-05-05-090513	N	5/13/2009	50 U	**210**	--	**0.4**	**2.7**	**7**	**15**	--	--	2 U	2 U	**35200**	**40500**	**6**	5 U	3 U	**35**	2 U	**6**	--	50 U	**3610**
BDC-05-05	BDC-05-05-091113	N	11/13/2009	50 U	50 U	--	**0.3**	**0.9**	**5**	**7**	--	--	2 U	2 U	**29900**	**25000**	5 U	5 U	3 U	**9**	2 U	2 U	--	50 U	**1120**
BDC-05-05	BDC-05-05-100518	N	5/18/2010	50 U	**110**	--	**0.4**	**1.9**	**7**	**10**	--	--	2 U	2 U	**41300**	**39100**	5 U	5 U	3 U	**11**	2 U	**2**	--	**540**	**3280**
BDC-05-05	BDC-05-05-101109	N	11/9/2010	50 U	**100**	--	**0.4**	**1.4**	**11**	**16**	--	--	2 U	2 U	**50100**	**52000**	5 U	5 U	3 U	**13**	2 U	**3**	--	**600**	**2850**
BDC-05-05	BDC-05-05-110502	N	5/2/2011	50 U	**170**	--	**0.3**	**1.4**	**8**	**12**	--	--	2 U	2 U	**41600**	**42400**	5 U	5 U	3 U	**8**	2 U	**3**	--	**420**	**2200**
BDC-05-05	BDC-05-05-111102	N	11/2/2011	--	--	--	**0.3**	**0.6**	--	--	--	--	--	--	--	--	--	--	--	--	**3**	**2**	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-870204	N	2/4/1987	--	10 U	--	--	--	--	1 U	--	--	--	**3**	5 U	5 U	--	1 U	--	5 U	--	--	**34**
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	41 U/6.4 (a)	--	**6843**	--	--	0.5 U	--	10 U	--	**25**	--	1.93 U	--	10 U	--	--	--	--	**71**
BDC-05-05	BDC-05-05-970519	N	5/19/1997	--	41 U	--	**3400**	--	--	--	--	61 U	--	33 U	--	--	--	3 U	--	--	--	--	**39**
BDC-05-05	BDC-05-05-980608	N	6/8/1998	--	41 U	--	**8000**	--	--	0.021 U	--	**130**	--	33 U	--	--	--	3 U	--	--	--	--	19 U
BDC-05-05	BDC-05-05-991122	N	11/22/1999	--	**42**	--	**7300**	--	--	0.029 U	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**34**
BDC-05-05	BDC-05-5-000501	N	5/1/2000	--	--	--	--	--	--	--	--	--	--	**4.1**	--	--	--	--	--	--	--	--	**33**
BDC-05-05	BDC-05-05-000531	N	5/31/2000	--	**3.2**	--	--	--	--	0.029 U	--	--	--	--	--	--	2.9 U	--	--	--	--	--	--
BDC-05-05	BDC-05-05-001206	N	12/6/2000	--	42 U	--	**8700**	--	--	--	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**36**
BDC-05-05	BDC-05-05-010611	N	6/11/2001	--	0.83 U	--	**8700**	--	--	--	--	**2.5**	--	**6.3**	--	--	--	3.1 U	--	--	--	--	**42**
BDC-05-05	BDC-05-05-011203	N	12/3/2001	--	**35**	--	**9700**	**24**	--	--	--	**54**	2.7 U	11 U	--	--	2.9 U	1 U	--	--	--	**14**	6 U
BDC-05-05	BDC-05-05-SPLIT-011203	N	12/3/2001	20 U	20 U	**10400**	**9750**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	**12**	**17**
BDC-05-05	BDC-05-05-020604	N	6/4/2002	20 U	20 U	**12900**	**11900**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	**8**	**19**
BDC-05-05	BDC-05-05-021203	N	12/3/2002	20 U	20 U	**12300**	**12600**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	**12**	**19**
BDC-05-05	BDC-05-05-030603	N	6/3/2003	1 U	**2**	**11100**	**10900**	--	--	--	**6**	**6**	10 U	10 U	--	--	3 U	3 U	--	--	--	**13**	**15**
BDC-05-05	BDC-05-05-031119	N	11/19/2003	1 U	**2**	**10300**	**10500**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	**9**	**18**
BDC-05-05	BDC-05-05-040429	N	4/29/2004	1 U	1 U	**10400**	**9240**	--	--	--	**5**	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	**7**	**19**
BDC-05-05	BDC-05-05-041018	N	10/18/2004	1 U	**1**	**12300**	**11900**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	**11**	**21**
BDC-05-05	BDC-05-05-050510	N	5/10/2005	1 U	1 U	**11200**	**10200**	--	--	--	**5**	**6**	10 U	10 U	--	--	3 U	3 U	--	--	--	**10**	**21**
BDC-05-05	BDC-05-05-051116	N	11/16/2005	1 U	1 U	**10300**	**10500**	--	--	--	**6**	**6**	**60**	10 U	--	--	3 U	3 U	--	--	--	**16**	**20**
BDC-05-05	BDC-05-05-060515	N	5/15/2006	1 U	**2**	**11800**	**12600**	--	--	--	**5**	**8**	10 U	**10**	--	--	3 U	3 U	--	--	--	**10**	**42**
BDC-05-05	BDC-05-05-061120	N	11/20/2006	1 U	1 U	**6920**	**6250**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**8**
BDC-05-05	BDC-05-05-070521	N	5/21/2007	2 U	1 U	**5150**	**5150**	--	--	--	**7**	**7**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-05	BDC-05-05-071126	N	11/26/2007	1 U	**1**	**4840**	**4990**	--	0.1 U	0.1 U	**7**	**6**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**10**
BDC-05-05	BDC-05-05-080522	N	5/22/2008	20 U	20 U	**7720**	**7890**	--	0.1 U	0.1 U	5 U	**5**	10 U	10 U	--	--	3 U	3 U	--	--	--	**10**	**10**
BDC-05-05	BDC-05-05-081120	N	11/20/2008	1 U	**1**	**8320**	**8190**	--	0.1 U	0.1 U	**8**	**9**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**70**
BDC-05-05	BDC-05-05-090513	N	5/13/2009	1 U	1 U	**9360**	**9680**	--	0.1 U	0.1 U	5 U	5 U	**10**	**10**	--	--	3 U	3 U	--	--	--	10 U	**30**
BDC-05-05	BDC-05-05-091113	N	11/13/2009	1 U	1 U	**6830**	**5750**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-05	BDC-05-05-100518	N	5/18/2010	1 U	1 U	**10200**	**9500**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**10**
BDC-05-05	BDC-05-05-101109	N	11/9/2010	1 U	1 U	**12500**	**12700**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**10**
BDC-05-05	BDC-05-05-110502	N	5/2/2011	20 U	20 U	**10300**	**9890**	--	0.1 U	0.1 U	**6**	**7**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-05	BDC-05-05-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																				
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-05	BDC-05-05-120506	N	5/6/2012	--	--	--	0.95 U	0.95 U	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.1**	--	--	--
BDC-05-05	BDC-05-05-121116	N	11/16/2012	--	--	--	**0.49 J**	**0.69 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.5**	--	--	--
BDC-05-05	BDC-05-05-130523	N	5/23/2013	--	--	--	**0.51 J**	**0.77 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-05	BDC-05-05-131114	N	11/14/2013	--	--	--	0.78 U	0.78 U	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.9**	--	--	--
BDC-05-05	BDC-05-05-140513	N	5/13/2014	--	--	--	0.78 U	0.78 U	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-05	BDC-05-05-141111	N	11/11/2014	--	--	--	**1 J**	**0.55 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-05	BDC-05-05-150427	N	4/27/2015	--	--	--	**0.92 J**	**0.63 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.6**	--	--	--
BDC-05-05	BDC-05-05-151028	N	10/28/2015	--	--	--	0.4 U	**0.58 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-05	BDC-05-05-160421	N	4/21/2016	--	--	--	0.4 U	**0.81 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-05	BDC-05-05-161102	N	11/2/2016	--	--	--	**0.42 J**	**0.78 J**	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	**2.9**	--	--	--
BDC-05-05	BDC-05-05-170503	N	5/3/2017	--	--	--	0.4 U	**0.87 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2.8	--	--	--
BDC-05-05	BDC-05-05-171106	N	11/6/2017	--	--	--	0.4 U	**0.76 J**	--	--	--	--	--	--	--	--	--	--	--	--	**2.2**	**3.5**	--	--	--
BDC-05-05	BDC-05-05-180502	N	5/2/2018	--	--	--	**0.346**	**0.625**	--	--	--	--	--	--	--	--	--	--	--	--	**1.90**	**2.49**	--	--	--
BDC-05-05	BDC-05-05-181107	N	11/7/2018	--	--	--	**0.410**	**0.816**	--	--	--	--	--	--	--	--	--	--	--	--	**2.71**	**3.34**	--	--	--
BDC-05-05	BDC-05-05-190503	N	5/3/2019	--	--	--	**0.330**	**0.774**	--	--	--	--	--	--	--	--	--	--	--	--	**2.01**	**2.66**	--	--	--
BDC-05-05	BDC-05-05-191105	N	11/5/2019	--	--	--	**0.407**	**0.649**	--	--	--	--	--	--	--	--	--	--	--	--	**2.80**	**2.55**	--	--	--
BDC-05-06	BDC-05-06-870204	N	2/4/1987	--	--	5 U	--	5 U	--	--	--	1 U	--	1 U	--	--	--	1 U	--	--	--	**3**	5 U	--	--
BDC-05-07	BDC-05-07-870311	N	3/11/1987	--	--	5 U	--	5 U	--	--	--	1 U	--	1 U	--	--	--	**2**	--	--	--	**4**	--	--	--
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	2 U	--	--	--
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	2 U	--	--	--
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	**483**	--	--	**8.6**	--	**42**	--	--	--	**11**	--	**29191**	--	21 U	--	**50**	--	**21**	--	--	**42187**
BDC-05-07	BDC-05-07-970519	N	5/19/1997	--	**130**	--	--	--	--	**19**	--	--	--	**11**	--	**28000**	--	6 U	--	**22**	--	**54**	--	--	**7400**
BDC-05-07	BDC-05-07-980608	N	6/8/1998	--	**110**	--	--	1.5 U	--	**20**	--	--	--	**12**	--	**23000**	--	6 U	--	8 U	--	**14**	--	--	**5100**
BDC-05-07	BDC-05-07-991122	N	11/22/1999	--	**97**	--	--	**1.5**	--	**18**	--	--	--	**13**	--	**24000**	--	5 U	--	**6**	--	**17**	--	--	**4300**
BDC-05-07	BDC-05-07-000531	N	5/31/2000	--	--	--	--	1.2 U	--	--	0.18 U	--	0.35 U	--	--	--	1.9 U	--	--	--	**6.6**	--	--	**1400**	--
BDC-05-07	BDC-05-07-001206	N	12/6/2000	--	**200**	--	--	--	--	**29**	--	--	--	5 U	--	**29000**	--	5 U	--	**11**	--	**14**	--	--	**7600**
BDC-05-07	BDC-05-07-010611	N	6/11/2001	--	**230**	--	--	--	--	**24**	--	--	--	**0.8**	--	**29000**	--	2 U	--	**6**	--	**17**	--	--	**8500**
BDC-05-07	BDC-05-07-011203	N	12/3/2001	--	**260**	--	1.1 U	**2.9**	--	**20**	0.18 U	--	**4**	**4**	--	**31000**	1.9 U	**3**	--	3 U	**24**	**16**	--	**69**	**5600**
BDC-05-07	BDC-05-07-020604	N	6/4/2002	50 U	**120**	--	50 U	50 U	**14**	**19**	--	--	2 U	2 U	**33800**	**33200**	5 U	5 U	3 U	**6**	**3**	**4**	--	**160**	**3600**
BDC-05-07	BDC-05-07-021203	N	12/3/2002	50 U	**180**	--	50 U	50 U	**12**	**19**	--	--	2 U	2 U	**28700**	**29200**	5 U	5 U	3 U	**8**	**4**	**7**	--	**70**	**3690**
BDC-05-07	BDC-05-07-030603	N	6/3/2003	50 U	**170**	--	1 U	**2**	**13**	**18**	--	--	2 U	2 U	**30300**	**29500**	5 U	5 U	3 U	**7**	**4**	**8**	--	**280**	**5510**
BDC-05-07	BDC-05-07-031119	N	11/19/2003	**100**	**360**	--	1 U	1 U	**14**	**24**	--	--	2 U	2 U	**31300**	**29800**	5 U	5 U	3 U	**9**	**5**	**11**	--	**320**	**7270**
BDC-05-07	BDC-05-07-040429	N	4/29/2004	**100**	**230**	--	**1**	**1**	**12**	**13**	--	--	2 U	2 U	**28900**	**24000**	5 U	5 U	3 U	3 U	**6**	**8**	--	**820**	**1990**
BDC-05-07	BDC-05-07-041018	N	10/18/2004	**80**	**280**	--	1 U	**1**	**12**	**18**	--	--	2 U	2 U	**29100**	**28000**	5 U	5 U	3 U	**6**	**7**	**10**	--	**780**	**2430**
BDC-05-07	BDC-05-07-050510	N	5/10/2005	**120**	**330**	--	1 U	**1**	**9**	**16**	--	--	2 U	2 U	**26300**	**24800**	5 U	5 U	3 U	**5**	**7**	**12**	--	**600**	**3670**
BDC-05-07	BDC-05-07-051116	N	11/16/2005	**110**	**320**	--	1 U	**2**	**12**	**20**	--	--	2 U	2 U	**24800**	**25700**	5 U	5 U	3 U	**6**	**8**	**12**	--	**180**	**3320**
BDC-05-07	BDC-05-07-060515	N	5/15/2006	**120**	**730**	--	1 U	**2**	**11**	**25**	--	--	2 U	2 U	**23700**	**23500**	5 U	5 U	3 U	**10**	**9**	**18**	--	**140**	**4970**
BDC-05-07	BDC-05-07-061120	N	11/20/2006	**80**	**220**	--	1 U	**1**	**13**	**15**	--	--	2 U	2 U	**29300**	**27600**	5 U	5 U	3 U	3 U	**9**	**8**	--	**160**	**500**
BDC-05-07	BDC-05-07-070521	N	5/21/2007	**290**	**670**	--	**2**	**3**	**11**	**17**	--	--	2 U	2 U	**26800**	**26200**	5 U	5 U	3 U	**3**	**12**	**16**	--	**1320**	**3210**

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																		
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-05	BDC-05-05-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-06	BDC-05-06-870204	N	2/4/1987	--	10 U	--	--	--	--	1 U	--	--	--	**3**	5 U	5 U	--	1 U	--	5 U	--	--	**19**
BDC-05-07	BDC-05-07-870311	N	3/11/1987	--	10 U	--	--	--	--	1 U	--	--	--	**3**	--	5 U	--	1 U	--	5 U	--	--	**29**
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	**4**
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	**10**
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	41 U/2.1 (a)	--	**12304**	--	--	0.5 U	--	11 U	--	18 U	--	1.93 U	--	11 U	--	--	--	--	**14**
BDC-05-07	BDC-05-07-970519	N	5/19/1997	--	41 U	--	**12000**	--	--	--	--	61 U	--	33 U	--	--	--	3 U	--	--	--	--	19 U
BDC-05-07	BDC-05-07-980608	N	6/8/1998	--	41 U	--	**9400**	--	--	0.021 U	--	**98**	--	33 U	--	--	--	3 U	--	--	--	--	19 U
BDC-05-07	BDC-05-07-991122	N	11/22/1999	--	42 U	--	**11000**	--	--	0.029 U	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**10**
BDC-05-07	BDC-05-07-000531	N	5/31/2000	--	1.9 U	--	--	**190**	--	0.029 U	--	--	**6.8**	--	--	--	2.9 U	--	--	--	--	**4.1**	--
BDC-05-07	BDC-05-07-001206	N	12/6/2000	--	42 U	--	**13000**	--	--	--	--	39 U	--	16 U	--	--	--	3 U	--	--	--	--	**12**
BDC-05-07	BDC-05-07-010611	N	6/11/2001	--	0.83 U	--	**14000**	--	--	--	--	1.1 U	--	**9.8**	--	--	--	3.1 U	--	--	--	--	**33**
BDC-05-07	BDC-05-07-011203	N	12/3/2001	--	27 U	--	**14000**	**150**	--	--	--	**30**	2.7 U	11 U	--	--	2.9 U	1 U	--	--	--	0.35 U	6 U
BDC-05-07	BDC-05-07-020604	N	6/4/2002	20 U	20 U	**17100**	**16400**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-07	BDC-05-07-021203	N	12/3/2002	20 U	20 U	**14000**	**14200**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-07	BDC-05-07-030603	N	6/3/2003	1 U	1 U	**14700**	**14200**	--	--	--	5 U	**6**	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-07	BDC-05-07-031119	N	11/19/2003	1 U	1 U	**15000**	**14200**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-07	BDC-05-07-040429	N	4/29/2004	1 U	1 U	**12100**	**9970**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-07	BDC-05-07-041018	N	10/18/2004	1 U	1 U	**12500**	**11900**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**7**
BDC-05-07	BDC-05-07-050510	N	5/10/2005	1 U	1 U	**12100**	**11500**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**12**
BDC-05-07	BDC-05-07-051116	N	11/16/2005	1 U	1 U	**11100**	**11000**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	**11**
BDC-05-07	BDC-05-07-060515	N	5/15/2006	1 U	1 U	**10800**	**10600**	--	--	--	5 U	5 U	10 U	**10**	--	--	3 U	3 U	--	--	--	6 U	**6**
BDC-05-07	BDC-05-07-061120	N	11/20/2006	1 U	1 U	**13300**	**12500**	--	--	--	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	6 U	6 U
BDC-05-07	BDC-05-07-070521	N	5/21/2007	**1**	**2**	**11400**	**11000**	--	--	--	**6**	**6**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-071126	N	11/26/2007	**120**	**350**	--	1 U	1 U	**10**	**19**	--	--	2 U	2 U	**22300**	**21900**	5 U	5 U	3 U	**4**	**9**	**14**	--	**270**	**3390**
BDC-05-07	BDC-05-07-080522	N	5/22/2008	**180**	**710**	--	1 U	**2**	**12**	**20**	--	--	2 U	2 U	**21500**	**20600**	5 U	5 U	3 U	**4**	**10**	**16**	--	**570**	**3350**
BDC-05-07	BDC-05-07-081023	N	10/23/2008	--	--	--	**1**	**4**	--	--	--	--	--	--	--	--	--	--	--	--	**13**	**22**	--	--	--
BDC-05-07	BDC-05-07-081120	N	11/20/2008	50 U	**510**	--	1 U	**3**	**9**	**22**	--	--	2 U	2 U	**27000**	**27500**	5 U	5 U	3 U	**5**	**2**	**11**	--	**900**	**7610**
BDC-05-07	BDC-05-07-081216	N	12/16/2008	--	--	--	1 U	**3**	--	--	--	--	--	--	--	--	--	--	--	--	**6**	**12**	--	--	--
BDC-05-07	BDC-05-07-090116	N	1/16/2009	--	--	--	1 U	**2**	--	--	--	--	--	--	--	--	--	--	--	--	**8**	**13**	--	--	--
BDC-05-07	BDC-05-07-090211	N	2/11/2009	--	--	--	**1**	**2**	--	--	--	--	--	--	--	--	--	--	--	--	**12**	**17**	--	--	--
BDC-05-07	BDC-05-07-090309	N	3/9/2009	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**9**	**13**	--	--	--
BDC-05-07	BDC-05-07-090416	N	4/16/2009	--	--	--	**1.1**	**2.2**	--	--	--	--	--	--	--	--	--	--	--	--	**8**	**15**	--	--	--
BDC-05-07	BDC-05-07-090513	N	5/13/2009	**100**	**600**	--	**0.6**	**1.9**	**10**	**21**	--	--	2 U	2 U	**21000**	**22300**	**7**	5 U	3 U	**5**	**8**	**16**	--	**950**	**4600**
BDC-05-07	BDC-05-07-090816	N	8/16/2009	--	--	--	**0.6**	**1.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**10**	--	--	--
BDC-05-07	BDC-05-07-091113	N	11/13/2009	50 U	**110**	--	**1.4**	**2.2**	**14**	**16**	--	--	2 U	2 U	**38400**	**34500**	5 U	5 U	**7**	**7**	2 U	**4**	--	**39100**	**39600**
BDC-05-07	BDC-05-07-100216	N	2/16/2010	--	--	--	**2.7**	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	**6**	**17**	--	--	--
BDC-05-07	BDC-05-07-100518	N	5/18/2010	**60**	**700**	--	**2.9**	**9**	**20**	**35**	--	--	2 U	2 U	**28700**	**28500**	5 U	**7**	**17**	**19**	2 U	**9**	--	**35500**	**54200**
BDC-05-07	BDC-05-07-100817	N	8/17/2010	--	--	--	**2.8**	**6.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**8**	--	--	--
BDC-05-07	BDC-05-07-101109	N	11/9/2010	50 U	**330**	--	**4.6**	**7.9**	**23**	**36**	--	--	2 U	2 U	**33100**	**33200**	5 U	5 U	**5**	**6**	2 U	**9**	--	**65000**	**72900**
BDC-05-07	BDC-05-07-110215	N	2/15/2011	--	--	--	**9.5**	**12.6**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**12**	--	--	--
BDC-05-07	BDC-05-07-110502	N	5/2/2011	**120**	**880**	--	**4.2**	**16.9**	**14**	**31**	--	--	2 U	2 U	**26800**	**27000**	5 U	**7**	**4**	**4**	**3**	**14**	--	**23400**	**39900**
BDC-05-07	BDC-05-07-111102	N	11/2/2011	--	--	--	**34.5**	**41.6**	--	--	--	--	--	--	--	--	--	--	--	--	**6**	**10**	--	--	--
BDC-05-07	BDC-05-07-120507	N	5/7/2012	--	--	--	**23.7**	**25.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-07	BDC-05-07-121115	N	11/15/2012	--	--	--	**17.1**	**15.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-130522	N	5/22/2013	--	--	--	**6.5**	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-131113	N	11/13/2013	--	--	--	**7.4**	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-140513	N	5/13/2014	--	--	--	**3.8**	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-141111	N	11/11/2014	--	--	--	**5.3**	**6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-150427	N	4/27/2015	--	--	--	**4.7**	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-151028	N	10/28/2015	--	--	--	**4.3**	**4.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.4**	--	--	--
BDC-05-07	BDC-05-07-160420	N	4/20/2016	--	--	--	**3**	**3.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-161102	N	11/2/2016	--	--	--	**2 J**	**2.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-170504	N	5/4/2017	--	--	--	0.4 U	**0.97 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-07	BDC-05-07-171106	N	11/6/2017	--	--	--	**5.3**	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-07	BDC-05-07-180502	N	5/2/2018	--	--	--	**5.54**	**7.34**	--	--	--	--	--	--	--	--	--	--	--	--	10.0 U	**22.2**	--	--	--
BDC-05-07	BDC-05-07-181106	N	11/6/2018	--	--	--	**3.48**	**4.49**	--	--	--	--	--	--	--	--	--	--	--	--	**2.89**	**22.2**	--	--	--
BDC-05-07	BDC-05-07-190503	N	5/3/2019	--	--	--	**2.40**	**2.90**	--	--	--	--	--	--	--	--	--	--	--	--	**0.502**	**4.80**	--	--	--
BDC-05-07	BDC-05-07-191106	N	11/6/2019	--	--	--	**1.98**	**2.31**	--	--	--	--	--	--	--	--	--	--	--	--	2.50 U	**7.47**	--	--	--
BDC-05-08	BDC-05-08-081023	N	10/23/2008	--	--	--	1 U	**7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	--	--	--
BDC-05-08	BDC-05-08-081120	N	11/20/2008	50 U	**18300**	--	**4**	**35**	**8**	**96**	--	--	2 U	2 U	**29500**	**35400**	5 U	**26**	3 U	**9**	2 U	**36**	--	**15500**	**53400**
BDC-05-08	BDC-05-08-081216	N	12/16/2008	--	--	--	**2**	**8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**6**	--	--	--
BDC-05-08	BDC-05-08-090116	N	1/16/2009	--	--	--	**1**	**8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**7**	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-071126	N	11/26/2007	1 U	1 U	**10300**	**9980**	--	0.1 U	0.1 U	**6**	**5**	10 U	**10**	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-07	BDC-05-07-080522	N	5/22/2008	20 U	20 U	**9650**	**9330**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-07	BDC-05-07-081023	N	10/23/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-081120	N	11/20/2008	1 U	**5**	**11500**	**11300**	--	0.1 U	0.1 U	**8**	**7**	10 U	10 U	--	--	3 U	3 U	--	--	--	**10**	**70**
BDC-05-07	BDC-05-07-081216	N	12/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-090513	N	5/13/2009	1 U	1 U	**10200**	**10400**	--	0.1 U	0.1 U	5 U	5 U	**10**	**10**	--	--	3 U	3 U	--	--	--	10 U	**10**
BDC-05-07	BDC-05-07-090816	N	8/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-091113	N	11/13/2009	1 U	1 U	**14000**	**12900**	--	0.1 U	0.1 U	5 U	5 U	**10**	**10**	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-07	BDC-05-07-100216	N	2/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-100518	N	5/18/2010	1 U	**1**	**12200**	**11800**	--	0.1 U	0.1 U	5 U	**5**	**10**	**10**	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-07	BDC-05-07-100817	N	8/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-101109	N	11/9/2010	1 U	1 U	**15000**	**14500**	--	0.1 U	0.1 U	5 U	**5**	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-07	BDC-05-07-110215	N	2/15/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-110502	N	5/2/2011	20 U	20 U	**11400**	**11300**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	10 U
BDC-05-07	BDC-05-07-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-081023	N	10/23/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-081120	N	11/20/2008	1 U	**7**	**13800**	**17200**	--	0.1 U	0.1 U	**7**	**8**	10 U	**20**	--	--	3 U	3 U	--	--	--	10 U	**80**
BDC-05-08	BDC-05-08-081216	N	12/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-08	BDC-05-08-090211	N	2/11/2009	--	--	--	**1**	**19**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**10**	--	--	--
BDC-05-08	BDC-05-08-090309	N	3/9/2009	--	--	--	**3**	**9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**7**	--	--	--
BDC-05-08	BDC-05-08-090416	N	4/16/2009	--	--	--	**3**	**6.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**6**	--	--	--
BDC-05-08	BDC-05-08-090513	N	5/13/2009	50 U	**7040**	--	**2.9**	**9**	**8**	**36**	--	--	2 U	2 U	**28800**	**33100**	**7**	**5**	3 U	3 U	2 U	**7**	--	**20100**	**33800**
BDC-05-08	BDC-05-08-090816	N	8/16/2009	--	--	--	**7.8**	**11.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-08	BDC-05-08-091113	N	11/13/2009	50 U	**3550**	--	**7.6**	**10.6**	**12**	**35**	--	--	2 U	2 U	**3330**	**34700**	5 U	**6**	3 U	3 U	2 U	**7**	--	**24700**	**30200**
BDC-05-08	BDC-05-08-100216	N	2/16/2010	--	--	--	**9.3**	**23.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**24**	--	--	--
BDC-05-08	BDC-05-08-100518	N	5/18/2010	50 U	**14900**	--	**10.6**	**31.4**	**14**	**84**	--	--	2 U	2 U	**37400**	**42400**	5 U	**23**	3 U	**8**	2 U	**27**	--	**26700**	**43800**
BDC-05-08	BDC-05-08-100817	N	8/17/2010	--	--	--	**8.7**	**13.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**13**	--	--	--
BDC-05-08	BDC-05-08-101109	N	11/9/2010	50 U	**16300**	--	**12**	**30.9**	**16**	**92**	--	--	2 U	2 U	**37400**	**41900**	5 U	**23**	3 U	**9**	2 U	**31**	--	**28600**	**46600**
BDC-05-08	BDC-05-08-110215	N	2/15/2011	--	--	--	**9.6**	**20.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**16**	--	--	--
BDC-05-08	BDC-05-08-110502	N	5/2/2011	**90**	**14400**	--	**10.2**	**28.9**	**13**	**85**	--	--	2 U	2 U	**32700**	**38700**	5 U	**20**	3 U	**7**	2 U	**24**	--	**24700**	**43400**
BDC-05-08	BDC-05-08-111102	N	11/2/2011	--	--	--	**9.9**	**13.7**	--	--	--	--	--	--	--	--	--	--	--	--	**3**	**12**	--	--	--
BDC-05-08	BDC-05-08-120506	N	5/6/2012	--	--	--	**19.6**	**21.4**	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	**6.7**	--	--	--
BDC-05-08	BDC-05-08-121116	N	11/16/2012	--	--	--	**10.1**	**13.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5**	--	--	--
BDC-05-08	BDC-05-08-130523	N	5/23/2013	--	--	--	**6.8**	**8.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.4**	--	--	--
BDC-05-08	BDC-05-08-131113	N	11/13/2013	--	--	--	**9.8**	**12**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-08	BDC-05-08-140513	N	5/13/2014	--	--	--	**10.8**	**14.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.5**	--	--	--
BDC-05-08	BDC-05-08-141110	N	11/10/2014	--	--	--	**15.2**	**17**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.4**	--	--	--
BDC-05-08	BDC-05-08-150427	N	4/27/2015	--	--	--	**10.6**	**19.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4.2**	--	--	--
BDC-05-08	BDC-05-08-151028	N	10/28/2015	--	--	--	**8.3**	**10.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.2**	--	--	--
BDC-05-08	BDC-05-08-160421	N	4/21/2016	--	--	--	**12**	**13.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**7**	--	--	--
BDC-05-08	BDC-05-08-171106	N	11/6/2017	--	--	--	**8.2**	**8.7**	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	2.0 U	--	--	--
BDC-05-08	BDC-05-08-180502	N	5/2/2018	--	--	--	**7.62**	**12.1**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**4.98**	--	--	--
BDC-05-08	BDC-05-08-181106	N	11/6/2018	--	--	--	**5.92**	**9.11**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**3.26**	--	--	--
BDC-05-08	BDC-05-08-190502	N	5/2/2019	--	--	--	**7.79**	**18.1**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**10.4**	--	--	--
BDC-05-08	BDC-05-08-191106	N	11/6/2019	--	--	--	**5.62**	**16.1**	--	--	--	--	--	--	--	--	--	--	--	--	**0.537**	**11.4**	--	--	--
BDC-05-09	BDC-05-09-110731	N	7/31/2011	--	--	--	**6.9**	**6.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-111102	N	11/2/2011	--	--	--	**39.6**	**42.4**	--	--	--	--	--	--	--	--	--	--	--	--	**6**	**9**	--	--	--
BDC-05-09	BDC-05-09-120507	N	5/7/2012	--	--	--	**52.2**	**59.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**11.2**	--	--	--
BDC-05-09	BDC-05-09-121115	N	11/15/2012	--	--	--	**69.8**	**73.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5.5**	--	--	--
BDC-05-09	BDC-05-09-130522	N	5/22/2013	--	--	--	**24.9**	**25.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.2**	--	--	--
BDC-05-09	BDC-05-09-131113	N	11/13/2013	--	--	--	**21.7**	**21.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-140513	N	5/13/2014	--	--	--	**10**	**9.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-141111	N	11/11/2014	--	--	--	**16.7**	**18.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-150427	N	4/27/2015	--	--	--	**9.1**	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-151028	N	10/28/2015	--	--	--	**8.2**	**7.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-DUP-151028	FD	10/28/2015	--	--	--	**7.6**	**7.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-160420	N	4/20/2016	--	--	--	**8.8**	**7.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																		
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-08	BDC-05-08-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-090513	N	5/13/2009	1 U	1 U	**14200**	**15300**	--	0.1 U	0.1 U	**5**	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**20**
BDC-05-08	BDC-05-08-090816	N	8/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-091113	N	11/13/2009	1 U	**1**	**16000**	**16600**	--	0.1 U	0.1 U	5 U	5 U	10 U	10 U	--	--	3 U	3 U	--	--	--	10 U	**10**
BDC-05-08	BDC-05-08-100216	N	2/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-100518	N	5/18/2010	1 U	**5**	**16900**	**19500**	--	0.1 U	0.1 U	5 U	5 U	10 U	**20**	--	--	3 U	3 U	--	--	--	10 U	**50**
BDC-05-08	BDC-05-08-100817	N	8/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-101109	N	11/9/2010	1 U	**5**	**16600**	**18100**	--	0.1 U	0.1 U	5 U	5 U	10 U	**20**	--	--	3 U	3 U	--	--	--	10 U	**60**
BDC-05-08	BDC-05-08-110215	N	2/15/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-110502	N	5/2/2011	20 U	20 U	**14000**	**16800**	--	0.1 U	0.1 U	5 U	**6**	10 U	**10**	--	--	3 U	3 U	--	--	--	10 U	**50**
BDC-05-08	BDC-05-08-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-DUP-151028	FD	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-09	BDC-05-09-161102	N	11/2/2016	--	--	--	**8.7**	**9.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-170504	N	5/4/2017	--	--	--	**6.3**	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-09	BDC-05-09-171106	N	11/6/2017	--	--	--	**5.0**	**5.3**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-09	BDC-05-09-180502	N	5/2/2018	--	--	--	**7.30**	**7.66**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-09	BDC-05-09-181106	N	11/6/2018	--	--	--	**9.24**	**8.89**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-09	BDC-05-09-190502	N	5/2/2019	--	--	--	**6.61**	**7.13**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-09	BDC-05-09-191106	N	11/6/2019	--	--	--	**6.18**	**6.17**	--	--	--	--	--	--	--	--	--	--	--	--	1.00 U	1.00 U	--	--	--
BDC-05-10	BDC-05-10-110731	N	7/31/2011	--	--	--	**1.9**	**2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-111102	N	11/2/2011	--	--	--	**36.8**	**38.2**	--	--	--	--	--	--	--	--	--	--	--	--	**4**	**8**	--	--	--
BDC-05-10	BDC-05-10-120506	N	5/6/2012	--	--	--	**48.2**	**51.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**11.9**	--	--	--
BDC-05-10	BDC-05-10-DUP-120506	FD	5/6/2012	--	--	--	**44.1**	**53**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**11.5**	--	--	--
BDC-05-10	BDC-05-10-121115	N	11/15/2012	--	--	--	**60**	**69.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.1**	--	--	--
BDC-05-10	BDC-05-10-130522	N	5/22/2013	--	--	--	**53.3**	**56.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.5**	--	--	--
BDC-05-10	BDC-05-10-131113	N	11/13/2013	--	--	--	**51.9**	**57.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-140513	N	5/13/2014	--	--	--	**33.9**	**36.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-141110	N	11/10/2014	--	--	--	**37.6**	**40.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-DUP-141110	FD	11/10/2014	--	--	--	**35.6**	**37.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-150427	N	4/27/2015	--	--	--	**24.4**	**25.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.4**	--	--	--
BDC-05-10	BDC-05-10-151028	N	10/28/2015	--	--	--	**18.6**	**21**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-160420	N	4/20/2016	--	--	--	**15.6**	**15.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-161102	N	11/2/2016	--	--	--	**20.6**	**21.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-170504	N	5/4/2017	--	--	--	**13.6**	**14.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-10	BDC-05-10-171106	N	11/6/2017	--	--	--	**11.3**	**13.8**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-10	BDC-05-10-180502	N	5/2/2018	--	--	--	**22.4**	**35.6**	--	--	--	--	--	--	--	--	--	--	--	--	50.0 U	**62.7**	--	--	--
BDC-05-10	BDC-05-10-181106	N	11/6/2018	--	--	--	**12.1**	**17.0**	--	--	--	--	--	--	--	--	--	--	--	--	**3.70**	**24.3**	--	--	--
BDC-05-10	BDC-05-10-190502	N	5/2/2019	--	--	--	**8.76**	**13.4**	--	--	--	--	--	--	--	--	--	--	--	--	**1.17**	**48.2**	--	--	--
BDC-05-10	BDC-05-10-191106	N	11/6/2019	--	--	--	**8.99**	**9.89**	--	--	--	--	--	--	--	--	--	--	--	--	1.00 U	**22.1**	--	--	--
BDC-05-11	BDC-05-11-110731	N	7/31/2011	--	--	--	**4.6**	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-111102	N	11/2/2011	--	--	--	**37.2**	**39.1**	--	--	--	--	--	--	--	--	--	--	--	--	**4**	**13**	--	--	--
BDC-05-11	BDC-05-11-120506	N	5/6/2012	--	--	--	**33.5**	**37.8**	--	--	--	--	--	--	--	--	--	--	--	--	**2.2**	**9**	--	--	--
BDC-05-11	BDC-05-11-121115	N	11/15/2012	--	--	--	**38**	**42.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.1**	--	--	--
BDC-05-11	BDC-05-11-130522	N	5/22/2013	--	--	--	**32.3**	**35.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-131113	N	11/13/2013	--	--	--	**35**	**38.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.2**	--	--	--
BDC-05-11	BDC-05-11-140513	N	5/13/2014	--	--	--	**35.7**	**37.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-141110	N	11/10/2014	--	--	--	**29.5**	**29.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-150427	N	4/27/2015	--	--	--	**17.2**	**18.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-151028	N	10/28/2015	--	--	--	**16.7**	**18.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-160420	N	4/20/2016	--	--	--	**20.2**	**19.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-161102	N	11/2/2016	--	--	--	**15.2**	**17.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																		
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-09	BDC-05-09-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-DUP-120506	FD	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-DUP-141110	FD	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-11	BDC-05-11-170504	N	5/4/2017	--	--	--	**18**	**18.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-11	BDC-05-11-171106	N	11/6/2017	--	--	--	**11.1**	**12.1**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-11	BDC-05-11-180502	N	5/2/2018	--	--	--	**12.9**	**13.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.886**	--	--	--
BDC-05-11	BDC-05-11-181107	N	11/7/2018	--	--	--	**15.0**	**14.3**	--	--	--	--	--	--	--	--	--	--	--	--	1.00 U	1.00 U	--	--	--
BDC-05-11	BDC-05-11-190502	N	5/2/2019	--	--	--	**12.4**	**13.6**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**1.07**	--	--	--
BDC-05-11	BDC-05-11-191106	N	11/6/2019	--	--	--	**7.84**	**7.74**	--	--	--	--	--	--	--	--	--	--	--	--	**0.807 J**	**0.650 J**	--	--	--
BDC-05-12	BDC-05-12-110731	N	7/31/2011	--	--	--	**1.6**	**2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-12	BDC-05-12-111102	N	11/2/2011	--	--	--	**30.6**	**41.1**	--	--	--	--	--	--	--	--	--	--	--	--	**9**	**12**	--	--	--
BDC-05-12	BDC-05-12-120506	N	5/6/2012	--	--	--	**71.4**	**82.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5.4**	--	--	--
BDC-05-12	BDC-05-12-121115	N	11/15/2012	--	--	--	**35.6**	**36.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.4**	--	--	--
BDC-05-12	BDC-05-12-130522	N	5/22/2013	--	--	--	**21.9**	**22.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-131113	N	11/13/2013	--	--	--	**11.5**	**10.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-140513	N	5/13/2014	--	--	--	**5.7**	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-141110	N	11/10/2014	--	--	--	**18**	**16.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-150427	N	4/27/2015	--	--	--	**17**	**16.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-151028	N	10/28/2015	--	--	--	**32.5**	**33.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.6**	--	--	--
BDC-05-12	BDC-05-12-160420	N	4/20/2016	--	--	--	**16.5**	**15.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-160809	N	8/9/2016	--	--	--	**8.1**	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-12	BDC-05-12-161103	N	11/3/2016	--	--	--	**14.3**	**15.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-170208	N	2/8/2017	--	--	--	**7.1**	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-170504	N	5/4/2017	--	--	--	**9.1**	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-12	BDC-05-12-170801	N	8/1/2017	--	--	--	**9.4**	**10.7**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-12	BDC-05-12-171106	N	11/6/2017	--	--	--	**4.8**	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-12	BDC-DUP3-180502	FD	5/2/2018	--	--	--	**8.64 J**	**6.84 J**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-12	BDC-05-12-180502	N	5/2/2018	--	--	--	**7.81 J**	**5.83 J**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-12	BDC-DUP3-181106	FD	11/6/2018	--	--	--	**6.44**	**6.00**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-12	BDC-05-12-181106	N	11/6/2018	--	--	--	**6.67**	**6.20**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-12	BDC-05-12-190502	N	5/2/2019	--	--	--	**8.88**	**8.57**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-12	BDC-DUP3-190502	FD	5/2/2019	--	--	--	**8.83**	**8.12**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-12	BDC-05-12-191106	N	11/6/2019	--	--	--	**5.16**	**4.78**	--	--	--	--	--	--	--	--	--	--	--	--	**0.456 J**	**0.621**	--	--	--
BDC-05-12	BDC-DUP3-191106	FD	11/6/2019	--	--	--	**5.42**	**4.89**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-13	BDC-05-13-110731	N	7/31/2011	--	--	--	**2.4**	**2.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-13	BDC-05-13-111101	N	11/1/2011	--	--	--	**64.3**	**67.7**	--	--	--	--	--	--	--	--	--	--	--	--	**3**	**17**	--	--	--
BDC-05-13	BDC-05-13-120506	N	5/6/2012	--	--	--	**46.4**	**51.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.4**	--	--	--
BDC-05-13	BDC-05-13-121115	N	11/15/2012	--	--	--	**54.5**	**59.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-130522	N	5/22/2013	--	--	--	**18.5**	**18.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-131113	N	11/13/2013	--	--	--	**27.3**	**31**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-140512	N	5/12/2014	--	--	--	**31.6**	**31.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-141110	N	11/10/2014	--	--	--	**18.9**	**19.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-11	BDC-05-11-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-180502	FD	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-181106	FD	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-190502	FD	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-191106	FD	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-13	BDC-05-13-150427	N	4/27/2015	--	--	--	**18.3**	**19.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-151028	N	10/28/2015	--	--	--	**18.8**	**19.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-160420	N	4/20/2016	--	--	--	**23.8**	**25.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-161103	N	11/3/2016	--	--	--	**19.8**	**23.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-170504	N	5/4/2017	--	--	--	**27.1**	**27.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-13	BDC-05-13-171106	N	11/6/2017	--	--	--	**30.4**	**29.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-13	BDC-05-13-180502	N	5/2/2018	--	--	--	**26.1**	**28.7**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.476 J**	--	--	--
BDC-05-13	BDC-05-13-181106	N	11/6/2018	--	--	--	**31.6**	**34.4**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-13	BDC-05-13-190502	N	5/2/2019	--	--	--	**22.8**	**23.0**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.405 J**	--	--	--
BDC-05-13	BDC-05-13-191106	N	11/6/2019	--	--	--	**25.4**	**22.5**	--	--	--	--	--	--	--	--	--	--	--	--	**2.02 J**	0.500 UJ	--	--	--
BDC-05-14	BDC-05-14-110731	N	7/31/2011	--	--	--	**3.6**	**4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	--	--	--
BDC-05-14	BDC-05-14-111101	N	11/1/2011	--	--	--	**73.8**	**82.8**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**22**	--	--	--
BDC-05-14	BDC-05-14-120506	N	5/6/2012	--	--	--	**9.4**	**11.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-121115	N	11/15/2012	--	--	--	**19.2**	**22**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-130522	N	5/22/2013	--	--	--	**11.6**	**12**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-131113	N	11/13/2013	--	--	--	**15**	**16.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-140512	N	5/12/2014	--	--	--	**21**	**18.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-141110	N	11/10/2014	--	--	--	**16.7**	**17.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-150427	N	4/27/2015	--	--	--	**15.3**	**18.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-151028	N	10/28/2015	--	--	--	**13.4**	**14.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-160420	N	4/20/2016	--	--	--	**16.1**	**15.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-161103	N	11/3/2016	--	--	--	**7.4**	**7.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-170504	N	5/4/2017	--	--	--	**20.7**	**23**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-14	BDC-05-14-171106	N	11/6/2017	--	--	--	**19.7**	**19.7**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-14	BDC-05-14-180502	N	5/2/2018	--	--	--	**24.5**	**25.3**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-14	BDC-05-14-181106	N	11/6/2018	--	--	--	**30.6**	**28.9**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-14	BDC-05-14-190502	N	5/2/2019	--	--	--	**31.1**	**30.1**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-14	BDC-05-14-191105	N	11/5/2019	--	--	--	**28.7**	**28.8**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-15	BDC-05-15-110731	N	7/31/2011	--	--	--	**19.1**	**18.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-111102	N	11/2/2011	--	--	--	**58.1**	**60.6**	--	--	--	--	--	--	--	--	--	--	--	--	**9**	**10**	--	--	--
BDC-05-15	BDC-05-15-120506	N	5/6/2012	--	--	--	**47.4**	**57.1**	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	**8.8**	--	--	--
BDC-05-15	BDC-05-15-121115	N	11/15/2012	--	--	--	**48.5**	**54.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-130522	N	5/22/2013	--	--	--	**60.6**	**64.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-131113	N	11/13/2013	--	--	--	**58.5**	**66.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-140513	N	5/13/2014	--	--	--	**61.1**	**65.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-141110	N	11/10/2014	--	--	--	**65.9**	**71.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-150427	N	4/27/2015	--	--	--	**52.2**	**55.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-151028	N	10/28/2015	--	--	--	**40.9 J**	**52.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-160420	N	4/20/2016	--	--	--	**50.7**	**57**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-13	BDC-05-13-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-15	BDC-05-15-161103	N	11/3/2016	--	--	--	**44.1**	**47.1**	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	2 U	--	--	--
BDC-05-15	BDC-05-15-170504	N	5/4/2017	--	--	--	**48.9**	**48**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-15	BDC-05-15-171107	N	11/7/2017	--	--	--	**52.8**	**52.6**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-15	BDC-05-15-180502	N	5/2/2018	--	--	--	**43.8**	**44.0**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.373 J**	--	--	--
BDC-05-15	BDC-05-15-181107	N	11/7/2018	--	--	--	**42.7**	**41.7**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	1.00 U	--	--	--
BDC-05-15	BDC-05-15-190503	N	5/3/2019	--	--	--	**45.4**	**45.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.530**	--	--	--
BDC-05-15	BDC-05-15-191106	N	11/6/2019	--	--	--	**50.1**	**49.1**	--	--	--	--	--	--	--	--	--	--	--	--	**0.679 J**	**0.347 J**	--	--	--
BDC-05-16	BDC-05-16-110731	N	7/31/2011	--	--	--	**5.8**	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-16	BDC-05-16-111101	N	11/1/2011	--	--	--	**73.7**	**78.5**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**5**	--	--	--
BDC-05-16	BDC-05-16-120506	N	5/6/2012	--	--	--	**38.7**	**42**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.7**	--	--	--
BDC-05-16	BDC-05-16-121115	N	11/15/2012	--	--	--	**37.1**	**40.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-130522	N	5/22/2013	--	--	--	**47.5**	**43.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-131113	N	11/13/2013	--	--	--	**46.3**	**47.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-140512	N	5/12/2014	--	--	--	**41.1**	**43.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-141111	N	11/11/2014	--	--	--	**54.8**	**56**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-150426	N	4/26/2015	--	--	--	**45.8**	**47.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.4**	--	--	--
BDC-05-16	BDC-05-16-151027	N	10/27/2015	--	--	--	**43.7**	**47.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-160420	N	4/20/2016	--	--	--	**39.4**	**42.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**6**	--	--	--
BDC-05-16	BDC-05-16-160809	N	8/9/2016	--	--	--	**32.6**	**32.5**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-16	BDC-05-16-161103	N	11/3/2016	--	--	--	**20.7**	**22.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-170208	N	2/8/2017	--	--	--	**32.2**	**32.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-170504	N	5/4/2017	--	--	--	**26.9**	**29.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-16	BDC-05-16-170801	N	8/1/2017	--	--	--	**29.0**	**30.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	**2.8**	--	--	--
BDC-05-16	BDC-05-16-171107	N	11/7/2017	--	--	--	**20.1**	**21.4**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-16	BDC-05-16-180502	N	5/2/2018	--	--	--	**26.0**	**27.1**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-16	BDC-05-16-181106	N	11/6/2018	--	--	--	**21.6**	**22.4**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-16	BDC-05-16-190502	N	5/2/2019	--	--	--	**25.8**	**27.2**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.371 J**	--	--	--
BDC-05-16	BDC-05-16-191106	N	11/6/2019	--	--	--	**26.9**	**26.5**	--	--	--	--	--	--	--	--	--	--	--	--	**1.14 J**	**0.869 J**	--	--	--
BDC-05-17	BDC-05-17-110731	N	7/31/2011	--	--	--	**3.8**	**4**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	**3**	--	--	--
BDC-05-17	BDC-05-17-111101	N	11/1/2011	--	--	--	**46.6**	**53**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5**	--	--	--
BDC-05-17	BDC-05-17-120506	N	5/6/2012	--	--	--	**25.5**	**57.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-17	BDC-05-17-121115	N	11/15/2012	--	--	--	**61.9**	**80.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-17	BDC-05-17-130523	N	5/23/2013	--	--	--	**62**	**142**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-17	BDC-05-17-131113	N	11/13/2013	--	--	--	**37.2**	**56.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-17	BDC-05-17-140512	N	5/12/2014	--	--	--	**33.4**	**37.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-17	BDC-05-17-141111	N	11/11/2014	--	--	--	**35.6**	**38.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-17	BDC-05-17-DUP-141111	FD	11/11/2014	--	--	--	**35.5**	**39.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.2**	--	--	--
BDC-05-17	BDC-05-17-150426	N	4/26/2015	--	--	--	**32.3**	**39.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4**	--	--	--
BDC-05-17	BDC-05-17-151027	N	10/27/2015	--	--	--	**36.1**	**36.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-15	BDC-05-15-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-DUP-141111	FD	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-17	BDC-05-17-160420	N	4/20/2016	--	--	--	**36.4**	**42.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.9**	--	--	--
BDC-05-17	BDC-05-17-161103	N	11/3/2016	--	--	--	**35**	**40.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-17	BDC-05-17-170504	N	5/4/2017	--	--	--	**36.8**	**44.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-17	BDC-05-17-171107	N	11/7/2017	--	--	--	**32.5**	**33.3**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-17	BDC-05-17-180502	N	5/2/2018	--	--	--	**32.2**	**32.4**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-17	BDC-05-17-181106	N	11/6/2018	--	--	--	**30.0**	**28.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-17	BDC-05-17-190502	N	5/2/2019	--	--	--	**31.1**	**32.1**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.526**	--	--	--
BDC-05-17	BDC-05-17-191106	N	11/6/2019	--	--	--	**31.8**	**30.3**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.635**	--	--	--
BDC-05-18	BDC-05-18-110731	N	7/31/2011	--	--	--	**20**	**19.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-111102	N	11/2/2011	--	--	--	**19.5**	**18.6**	--	--	--	--	--	--	--	--	--	--	--	--	**3**	**3**	--	--	--
BDC-05-18	BDC-05-18-120506	N	5/6/2012	--	--	--	**12.6**	**13.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-121115	N	11/15/2012	--	--	--	**14.3**	**15**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-130523	N	5/23/2013	--	--	--	**13.6**	**13.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-131114	N	11/14/2013	--	--	--	**1.9 J**	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-140513	N	5/13/2014	--	--	--	**1.8 J**	**1.4 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-141110	N	11/10/2014	--	--	--	**2 J**	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-150426	N	4/26/2015	--	--	--	**3.8**	**27.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.7**	--	--	--
BDC-05-18	BDC-05-18-151027	N	10/27/2015	--	--	--	**1.3 J**	**14.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5.5**	--	--	--
BDC-05-18	BDC-05-18-160420	N	4/20/2016	--	--	--	**1.3 J**	**2.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-160809	N	8/9/2016	--	--	--	**1.9 J**	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-18	BDC-05-18-161102	N	11/2/2016	--	--	--	**3.7**	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-170207	N	2/7/2017	--	--	--	**2.9**	**11.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-170503	N	5/3/2017	--	--	--	**1.7 J**	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-18	BDC-05-18-170801	N	8/1/2017	--	--	--	**1.3 J**	**46.9 J**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-18	BDC-05-18-171107	N	11/7/2017	--	--	--	**2.7**	**112**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	**3.7**	--	--	--
BDC-05-18	BDC-05-18-180502	N	5/2/2018	--	--	--	**4.51**	**4.98**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**1.75**	--	--	--
BDC-05-18	BDC-05-18-181107	N	11/7/2018	--	--	--	**1.40**	**2.60**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.413 J**	--	--	--
BDC-05-18	BDC-05-18-190502	N	5/2/2019	--	--	--	**0.483**	**2.11**	--	--	--	--	--	--	--	--	--	--	--	--	**0.399 J**	**0.789**	--	--	--
BDC-05-18	BDC-05-18-191106	N	11/6/2019	--	--	--	**0.332**	**6.18**	--	--	--	--	--	--	--	--	--	--	--	--	**0.766**	**1.78**	--	--	--
BDC-05-19	BDC-05-19-110731	N	7/31/2011	--	--	--	**1.3**	**1.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-19	BDC-05-19-111101	N	11/1/2011	--	--	--	**19.7**	**19.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**7**	--	--	--
BDC-05-19	BDC-05-19-120506	N	5/6/2012	--	--	--	**52.4**	**57.5**	--	--	--	--	--	--	--	--	--	--	--	--	**7.7**	**31.5**	--	--	--
BDC-05-19	BDC-05-19-121115	N	11/15/2012	--	--	--	**73.5**	**88.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**6**	--	--	--
BDC-05-19	BDC-05-19-130522	N	5/22/2013	--	--	--	**50.7**	**53.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5.9**	--	--	--
BDC-05-19	BDC-05-19-131113	N	11/13/2013	--	--	--	**39.9**	**46.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.5**	--	--	--
BDC-05-19	BDC-05-19-140513	N	5/13/2014	--	--	--	**25.3**	**32.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.1**	--	--	--
BDC-05-19	BDC-05-19-141110	N	11/10/2014	--	--	--	**25.1**	**31.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.6**	--	--	--
BDC-05-19	BDC-05-19-150427	N	4/27/2015	--	--	--	**22.5**	**31.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**5.5**	--	--	--
BDC-05-19	BDC-05-19-151028	N	10/28/2015	--	--	--	**27**	**33.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.9**	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-17	BDC-05-17-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-19	BDC-05-19-160420	N	4/20/2016	--	--	--	**20.6**	**24.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.8**	--	--	--
BDC-05-19	BDC-05-19-160809	N	8/9/2016	--	--	--	**13.6**	**14.6**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-19	BDC-05-DUP2-160809	FD	8/9/2016	--	--	--	**13.8**	**15.4**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-19	BDC-05-19-161103	N	11/3/2016	--	--	--	**10.4**	**11.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-19	BDC-05-19-170208	N	2/8/2017	--	--	--	**10.7**	**22.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-19	BDC-05-DUP-170208	FD	2/8/2017	--	--	--	**11.9**	**18.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.7**	--	--	--
BDC-05-19	BDC-05-19-170504	N	5/4/2017	--	--	--	**13.2**	**20.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-19	BDC-05-19-170801	N	8/1/2017	--	--	--	**12.4**	**17.2**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-19	BDC-DUP2-170801	FD	8/1/2017	--	--	--	**12.7**	**17.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-19	BDC-05-19-171106	N	11/6/2017	--	--	--	**4.1**	**6.4**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-19	BDC-05-19-180502	N	5/2/2018	--	--	--	**7.81**	**10.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-19	BDC-05-19-181106	N	11/6/2018	--	--	--	**6.19**	**6.42**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-19	BDC-05-19-190502	N	5/2/2019	--	--	--	**10.6**	**12.1**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.546**	--	--	--
BDC-05-19	BDC-05-19-191105	N	11/5/2019	--	--	--	**4.70**	**6.19**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.485 J**	--	--	--
BDC-05-2,3,4,7,8	BDC-005-2,3,4,7,8-081023	N	10/23/2008	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	5 U	--	--	--	**6**	--	--	--
BDC-05-20	BDC-05-20-110731	N	7/31/2011	--	--	--	**10.6**	**10.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-111103	N	11/3/2011	--	--	--	**10.5**	**10.1**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-20	BDC-05-20-120507	N	5/7/2012	--	--	--	**10.9**	**10.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-121116	N	11/16/2012	--	--	--	**13.2**	**12.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-130523	N	5/23/2013	--	--	--	**17.4**	**16.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-131114	N	11/14/2013	--	--	--	**21.3**	**20.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-140513	N	5/13/2014	--	--	--	**17**	**16.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-141110	N	11/10/2014	--	--	--	**21.3**	**20.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-150426	N	4/26/2015	--	--	--	**23**	**27.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-151027	N	10/27/2015	--	--	--	**28.4**	**27.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-160421	N	4/21/2016	--	--	--	**29.6**	**33.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-160809	N	8/9/2016	--	--	--	**28.2**	**30.0**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-20	BDC-05-20-161103	N	11/3/2016	--	--	--	**27.5**	**27.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-170208	N	2/8/2017	--	--	--	**29.9**	**29**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-170504	N	5/4/2017	--	--	--	**26.4**	**27.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-20	BDC-05-20-170801	N	8/1/2017	--	--	--	**26.8**	**27.1**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-20	BDC-05-20-171107	N	11/7/2017	--	--	--	**26.9**	**27.3**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-20	BDC-DUP3-171107	FD	11/7/2017	--	--	--	**27.4**	**28.8**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-20	BDC-05-20-180502	N	5/2/2018	--	--	--	**27.8**	**27.8**	--	--	--	--	--	--	--	--	--	--	--	--	**0.358 J**	0.500 U	--	--	--
BDC-05-20	BDC-05-20-181107	N	11/7/2018	--	--	--	**28.2**	**29.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	1.00 U	--	--	--
BDC-05-20	BDC-05-20-190502	N	5/2/2019	--	--	--	**26.6**	**27.7**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-20	BDC-05-20-191106	N	11/6/2019	--	--	--	**26.2**	**24.7**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.478 J**	--	--	--
BDC-05-21	BDC-05-21-110731	N	7/31/2011	--	--	--	**5.5**	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-111103	N	11/3/2011	--	--	--	**5.1**	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																		
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-19	BDC-05-19-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-DUP2-160809	FD	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-DUP-170208	FD	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-DUP2-170801	FD	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-2,3,4,7,8	BDC-005-2,3,4,7,8-081023	N	10/23/2008	--	20 U	--	--	--	--	--	--	--	--	10 U	--	--	--	3 U	--	--	--	--	**20**
BDC-05-20	BDC-05-20-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-DUP3-171107	FD	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-21	BDC-05-21-120507	N	5/7/2012	--	--	--	**10.7**	**10.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**4.7**	--	--	--
BDC-05-21	BDC-05-21-121116	N	11/16/2012	--	--	--	**19.6**	**19.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-130523	N	5/23/2013	--	--	--	**22.4**	**24.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-131114	N	11/14/2013	--	--	--	**17.3**	**18.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-140513	N	5/13/2014	--	--	--	**17**	**21.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-141110	N	11/10/2014	--	--	--	**14.2**	**16.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-150427	N	4/27/2015	--	--	--	**11.1**	**12.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-151027	N	10/27/2015	--	--	--	**10.9**	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-160421	N	4/21/2016	--	--	--	**16.4**	**15.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-DUP2-160421	FD	4/21/2016	--	--	--	**17.5**	**17.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-160809	N	8/9/2016	--	--	--	**8.4**	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-21	BDC-05-21-161102	N	11/2/2016	--	--	--	**8.8**	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-DUP3-161102	FD	11/2/2016	--	--	--	**8.3**	**8.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170207	N	2/7/2017	--	--	--	**6.2**	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-05-21-170503	N	5/3/2017	--	--	--	**9**	**8.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-21	BDC-DUP3-170503	FD	5/3/2017	--	--	--	**8.8**	**8.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170801	N	8/1/2017	--	--	--	**8.5**	**9.4**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-21	BDC-05-21-171107	N	11/7/2017	--	--	--	**11.3**	**10.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-21	BDC-05-21-180502	N	5/2/2018	--	--	--	**8.42**	**8.02**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-21	BDC-05-21-181107	N	11/7/2018	--	--	--	**7.34**	**6.75**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-21	BDC-05-21-190502	N	5/2/2019	--	--	--	**8.93**	**9.23**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-21	BDC-05-21-191106	N	11/6/2019	--	--	--	**10.5**	**9.41**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-22	BDC-05-22-110731	N	7/31/2011	--	--	--	**23.9**	**24.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-111103	N	11/3/2011	--	--	--	**20.3**	**19.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-22	BDC-05-22-120507	N	5/7/2012	--	--	--	**22.6**	**25**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2.1**	--	--	--
BDC-05-22	BDC-05-22-121116	N	11/16/2012	--	--	--	**31.4**	**32.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-130523	N	5/23/2013	--	--	--	**29**	**29.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-131114	N	11/14/2013	--	--	--	**26.6**	**28.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-140513	N	5/13/2014	--	--	--	**24.7**	**26.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-141110	N	11/10/2014	--	--	--	**30.6**	**31**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-150427	N	4/27/2015	--	--	--	**26.3**	**25.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3.7**	--	--	--
BDC-05-22	BDC-05-22-151027	N	10/27/2015	--	--	--	**26.8**	**29.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-160421	N	4/21/2016	--	--	--	**34**	**34.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-160809	N	8/9/2016	--	--	--	**29.7**	**28.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-22	BDC-05-22-161103	N	11/3/2016	--	--	--	**25.3**	**24.9**	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	2 U	--	--	--
BDC-05-22	BDC-05-22-170208	N	2/8/2017	--	--	--	**26**	**25.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-170504	N	5/4/2017	--	--	--	**29.8**	**28**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-22	BDC-05-22-170801	N	8/1/2017	--	--	--	**29.7**	**31.6**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-22	BDC-05-22-171107	N	11/7/2017	--	--	--	**20.8**	**20.6**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-21	BDC-05-21-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-DUP2-160421	FD	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-DUP3-161102	FD	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-DUP3-170503	FD	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-22	BDC-05-22-180502	N	5/2/2018	--	--	--	**31.8**	**33.0**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-22	BDC-05-22-181107	N	11/7/2018	--	--	--	**29.7**	**28.1**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**4.85**	--	--	--
BDC-05-22	BDC-05-22-190502	N	5/2/2019	--	--	--	**39.2**	**42.8**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-22	BDC-05-22-191106	N	11/6/2019	--	--	--	**42.5**	**42.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-23	BDC-05-23-110731	N	7/31/2011	--	--	--	**5.3**	**5.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**2**	--	--	--
BDC-05-23	BDC-05-23-111103	N	11/3/2011	--	--	--	**5.5**	**5.3**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-23	BDC-05-23-120507	N	5/7/2012	--	--	--	**7.9**	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-121116	N	11/16/2012	--	--	--	**10.3**	**11.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-130523	N	5/23/2013	--	--	--	**14.9**	**15.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-131114	N	11/14/2013	--	--	--	**15.4**	**16.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-140513	N	5/13/2014	--	--	--	**22.8**	**23.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-141110	N	11/10/2014	--	--	--	**20.5**	**22.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-150427	N	4/27/2015	--	--	--	**20.9**	**21.6**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-151027	N	10/27/2015	--	--	--	**20**	**21.2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-160421	N	4/21/2016	--	--	--	**22.6**	**24.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-160809	N	8/9/2016	--	--	--	**24.6**	**25.7**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-23	BDC-05-23-161103	N	11/3/2016	--	--	--	**22.6**	**23.3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	**3**	--	--	--
BDC-05-23	BDC-05-23-170207	N	2/7/2017	--	--	--	**15.8**	**15.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-170503	N	5/3/2017	--	--	--	**25.6**	**26**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-23	BDC-05-23-170801	N	8/1/2017	--	--	--	**19.1**	**16.9**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-23	BDC-05-23-171107	N	11/7/2017	--	--	--	**24.8**	**24.5**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-23	BDC-05-23-180502	N	5/2/2018	--	--	--	**26.3**	**25.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.651**	--	--	--
BDC-05-23	BDC-05-23-181107	N	11/7/2018	--	--	--	**22.2**	**21.5**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**1.01**	--	--	--
BDC-05-23	BDC-05-23-190502	N	5/2/2019	--	--	--	**27.9**	**35.3**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**1.05**	--	--	--
BDC-05-23	BDC-05-23-191105	N	11/5/2019	--	--	--	**21.7**	**21.3**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-24	BDC-05-24-110731	N	7/31/2011	--	--	--	**2.8**	**2.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-111101	N	11/1/2011	--	--	--	**2.1**	**2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-120506	N	5/6/2012	--	--	--	**4.2**	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-121115	N	11/15/2012	--	--	--	**2.9**	**1.7 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-130522	N	5/22/2013	--	--	--	**2.7**	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-131113	N	11/13/2013	--	--	--	**3**	**2.9**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-140512	N	5/12/2014	--	--	--	**2.4**	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-141110	N	11/10/2014	--	--	--	**1.3 J**	**1.3 J**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-150427	N	4/27/2015	--	--	--	**2.8**	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-DUP-150427	FD	4/27/2015	--	--	--	**2.1**	**2.4**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-151028	N	10/28/2015	--	--	--	**3.9**	**3**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-160420	N	4/20/2016	--	--	--	**2.3**	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-DUP1-160420	FD	4/20/2016	--	--	--	**2.9**	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-24	BDC-05-24-160809	N	8/9/2016	--	--	--	**3.3**	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																			
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	Sample ID	Sample Type	Sample Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-22	BDC-05-22-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-DUP1-160420	FD	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				Aluminum	Aluminum	Antimony	Arsenic	Arsenic	Barium	Barium	Beryllium	Beryllium	Cadmium	Cadmium	Calcium	Calcium	Chromium, Total	Chromium, Total	Cobalt	Cobalt	Copper	Copper	Cyanide	Iron	Iron
				D	T	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	D	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-24	BDC-05-24-161103	N	11/3/2016	--	--	--	**1.9 J**	**2**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-170208	N	2/8/2017	--	--	--	**2 J**	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	2 U	--	--	--
BDC-05-24	BDC-05-24-170504	N	5/4/2017	--	--	--	**2.7**	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	2 U	2 U	--	--	--
BDC-05-24	BDC-05-24-170801	N	8/1/2017	--	--	--	**2.1**	**3.0**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-24	BDC-05-24-171107	N	11/7/2017	--	--	--	**0.64 J**	**1.6 J**	--	--	--	--	--	--	--	--	--	--	--	--	2.0 U	2.0 U	--	--	--
BDC-05-24	BDC-05-24-180502	N	5/2/2018	--	--	--	**0.795**	**0.808**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-24	BDC-05-24-181106	N	11/6/2018	--	--	--	**1.65**	**1.72**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-24	BDC-05-24-190502	N	5/2/2019	--	--	--	**1.30**	**1.27**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	0.500 U	--	--	--
BDC-05-24	BDC-05-24-191105	N	11/5/2019	--	--	--	**1.56**	**1.69**	--	--	--	--	--	--	--	--	--	--	--	--	0.500 U	**0.381 J**	--	--	--
SWMU-20																									
Sump Water	SUMP WATER-890601	N	6/1/1989	--	--	0.001 U	--	**0.0016**	--	**0.061**	--	0.001 U	--	0.002 U	--	--	--	**0.011**	--	0.003 U	--	0.01 U	5 U	--	--
WC-05-2	WC-05-2-860701	N	7/1/1986	--	--	--	--	**18**	--	--	--	1.0 U	--	1.0 U	--	--	--	**2.0**	--	--	--	**5.0**	--	--	--
WC-05-2	WC-05-2-861101	N	11/1/1986	--	--	--	--	**9.0**	--	--	--	1.0 U	--	1.0 U	--	--	--	**8.0**	--	--	--	**24**	--	--	--
WC-05-2	WC-05-2-870201	N	2/1/1987	--	--	--	--	5.0 U	--	--	--	1.0 U	--	1.0 U	--	--	--	**1.0**	--	--	--	**5.0**	--	--	--
WC-05-2	WC-05-2-870301	N	3/1/1987	--	--	--	--	5.0 U	--	--	--	1.0 U	--	1.0 U	--	--	--	**2.0**	--	--	--	**1.0**	--	--	--
WC-05-2	WC-05-2-880201	N	2/1/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.0 U	--	--	--	2.0 U	--	--	--
WC-05-2	WC-05-2-951101	N	11/1/1995	--	--	--	--	1.28 U	--	--	--	--	--	10 U	--	--	--	21 U	--	--	--	10 U	--	--	--
WC-05-2	WC-05-2-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	**8.0**	--	--	--	6.0 U	--	--	--	**8.0**	--	--	--
WC-05-2	WC-05-2-980601	N	6/1/1998	--	--	--	--	1.5 U	--	--	--	--	--	**6.0**	--	--	--	6.0 U	--	--	--	**13**	--	--	--
WC-05-2	WC-05-2-991101	N	11/1/1999	--	--	--	--	**2.7**	--	--	--	--	--	5.0 U	--	--	--	5.0 U	--	--	--	**13**	--	--	--
WC-05-2	WC-05-2-000501	N	5/1/2000	--	--	--	--	1.2 U	--	--	--	0.18 U	--	**1.0**	--	--	--	1.9 U	--	--	--	**5.8**	--	--	--
WC-05-2	WC-05-2-001201	N	12/1/2000	--	--	--	--	--	--	--	--	--	--	5.0 U	--	--	--	5.0 U	--	--	--	**16**	--	--	--
WC-05-2	WC-05-2-010601	N	6/1/2001	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	2.0 U	--	--	--	**13**	--	--	--
Museum of Flight																									
B-1	B-1	N	1/4/2001	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	10 U	--	--	--	6 U	--	--	--
B-2	B-2	N	1/4/2001	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	10 U	--	--	--	**8**	--	--	--
B-3	B-3	N	1/4/2001	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	10 U	--	--	--	6 U	--	--	--
B-5	B-5	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	B-6	N	1/4/2001	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	**10**	--	--	--	**10**	--	--	--
B-7	B-7	N	1/4/2001	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	**30**	--	--	--	**34**	--	--	--
B-10	B-10	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																		
				Lead	Lead	Magnesium	Magnesium	Manganese	Mercury	Mercury	Molybdenum	Molybdenum	Nickel	Nickel	Phenol	Selenium	Silver	Silver	Strontium	Thallium	Vanadium	Zinc	Zinc
				D	T	D	T	D	D	T	D	T	D	T	N/A	T	D	T	T	T	T	D	T
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-24	BDC-05-24-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SWMU-20																							
Sump Water	SUMP WATER-890601	N	6/1/1989	--	0.001 U	--	--	--	--	0.0001 U	--	0.005 U	--	**0.03**	--	0.001 U	--	0.003 U	**0.643**	0.001 U	**0.008**	--	0.025 U
WC-05-2	WC-05-2-860701	N	7/1/1986	--	--	--	--	--	--	--	--	--	--	**7.0**	--	--	--	--	--	--	--	--	**29**
WC-05-2	WC-05-2-861101	N	11/1/1986	--	--	--	--	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--	**28**
WC-05-2	WC-05-2-870201	N	2/1/1987	--	--	--	--	--	--	--	--	--	--	**6.0**	--	--	--	--	--	--	--	--	**29**
WC-05-2	WC-05-2-870301	N	3/1/1987	--	--	--	--	--	--	--	--	--	--	**6.0**	--	--	--	--	--	--	--	--	**8.0**
WC-05-2	WC-05-2-880201	N	2/1/1988	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	**7.0**
WC-05-2	WC-05-2-951101	N	11/1/1995	--	--	--	--	--	--	**0.612**	--	--	--	18 U	--	--	--	--	--	--	--	--	10 U
WC-05-2	WC-05-2-970501	N	5/1/1997	--	**85**	--	--	--	--	--	--	--	--	33 U	--	--	--	--	--	--	--	--	**28**
WC-05-2	WC-05-2-980601	N	6/1/1998	--	41 U	--	--	--	--	0.21 U	--	--	--	33 U	--	--	--	--	--	--	--	--	19 U
WC-05-2	WC-05-2-991101	N	11/1/1999	--	42 U	--	--	--	--	0.029 U	--	--	--	16 U	--	--	--	--	--	--	--	--	**11**
WC-05-2	WC-05-2-000501	N	5/1/2000	--	1.9 U	--	--	--	--	0.029 U	--	--	--	2.7 U	--	--	--	--	--	--	--	--	**3.6**
WC-05-2	WC-05-2-001201	N	12/1/2000	--	42 U	--	--	--	--	--	--	--	--	16 U	--	--	--	--	--	--	--	--	**10**
WC-05-2	WC-05-2-010601	N	6/1/2001	--	0.83 U	--	--	--	--	--	--	--	--	**5.20**	--	--	--	--	--	--	--	--	**37**
Museum of Flight																							
B-1	B-1	N	1/4/2001	--	4 U	--	--	--	--	0.2 U	--	--	--	20 U	--	--	--	--	--	--	--	--	**12**
B-2	B-2	N	1/4/2001	--	4 U	--	--	--	--	0.2 U	--	--	--	20 U	--	--	--	--	--	--	--	--	**28**
B-3	B-3	N	1/4/2001	--	4 U	--	--	--	--	0.2 U	--	--	--	20 U	--	--	--	--	--	--	--	--	**40**
B-5	B-5	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	B-6	N	1/4/2001	--	4 U	--	--	--	--	0.2 U	--	--	--	20 U	--	--	--	--	--	--	--	--	**33**
B-7	B-7	N	1/4/2001	--	**7**	--	--	--	--	0.2 U	--	--	--	20 U	--	--	--	--	--	--	--	--	**67**
B-10	B-10	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-3
Groundwater Total/Dissolved Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
Bold text indicates detected analyte
(a) This sample was analyzed for total lead via two different analytical methods: EPA Methods 200.7 and 239.1.

Abbreviations/Acronyms:

-- = not analyzed
µg/L = micrograms per liter
D = dissolved fraction
FD = field duplicate
ID = Identification
N = primary sample
N/A = not applicable
T = total fraction

Table D-4
Groundwater Polychlorinated Biphenyl Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement									
				Aroclor 1016	Aroclor 1016/1242	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Total PCBs
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
AOC-01/02													
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	--	0.25 U	--	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Museum of Flight													
MW-2	MW-2-970519	N	5/19/1997	1.0 U	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
MW-5	MW-5-951101	N	11/1/1995	1.0 U	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
MW-5	MW-5-970519	N	5/19/1997	1.0 U	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
MW-5	MW-5-991121	N	11/21/1999	--	0.25 U	--	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SWMU-16													
SB-01	SB-1(0-3.5' BL WT)	N	1/23/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-01	SB-1(10-13.5' BL WT)	N	1/23/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-02	SB-2(0-3.5' BL WT)	N	1/23/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-02	SB-2(10-13.5' BL WT)	N	1/23/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-03	SB-3(0-3.5' BL WT)	N	1/23/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-03	SB-3(10-13.5' BL WT)	N	1/23/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-04	SB-4(0-3.5' BL WT)	N	1/24/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-04	SB-4(10-13.5' BL WT)	N	1/24/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-05	SB-5(0-3.5' BL WT)	N	1/24/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-05	SB-5(10-13.5' BL WT)	N	1/24/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-06	SB-6(0-3.5' BL WT)	N	1/24/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SB-06	SB-6(10-13.5' BL WT)	N	1/24/2001	1.0 U	--	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	2.0 U
SWMU-17													
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	1 U	--	--	--	1 U	1 U	1 U	1 U	--	1 U
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
BDC-05-03	BDC-05-03-991122	N	11/22/1999	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-03	BDC-05-03-000531	N	5/31/2000	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
BDC-05-04	BDC-05-04-970519	N	5/19/1997	1 U	--	--	--	1 U	1 U	1 U	1 U	--	1 U
BDC-05-04	BDC-05-04-991122	N	11/22/1999	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-04	BDC-05-04-000531	N	5/31/2000	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
BDC-05-05	BDC-05-05-970519	N	5/19/1997	1 U	--	--	--	1 U	1 U	1 U	1 U	--	1 U
BDC-05-05	BDC-05-05-991122	N	11/22/1999	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-05	BDC-05-05-000531	N	5/31/2000	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	0.05 U	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
BDC-05-07	BDC-05-07-970519	N	5/19/1997	1 U	--	--	--	1 U	1 U	1 U	1 U	--	1 U
BDC-05-07	BDC-05-07-991122	N	11/22/1999	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BDC-05-07	BDC-05-07-000531	N	5/31/2000	--	0.1 U	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

Abbreviations/Acronyms:

-- = not analyzed
µg/L = micrograms per liter
ID = Identification
N = primary sample
N/A = not applicable
PCB = polychlorinated biphenyl

Table D-5
Groundwater Pesticide Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																					
				gamma.-Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Endrin Ketone	gamma-BHC	Heptachlor	Heptachlor Epoxide	Methoxychlor	Toxaphene
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Museum of Flight																								
MW-2	MW-2-970519	N	5/19/1997	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.5 U	5.0 U
MW-5	MW-5-951101	N	11/1/1995	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.5 U	5.0 U
MW-5	MW-5-970519	N	5/19/1997	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.5 U	5.0 U
SWMU-17																								
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.5 U	5 U
BDC-05-04	BDC-05-04-970519	N	5/19/1997	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.5 U	5 U
BDC-05-05	BDC-05-05-970519	N	5/19/1997	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.5 U	5 U
BDC-05-07	BDC-05-07-970519	N	5/19/1997	0.05 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1 U	0.05 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.05 U	0.05 U	0.05 U	0.5 U	5 U

Notes:
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

Abbreviations/Acronyms:
µg/L = micrograms per liter
ID = Identification
N = primary sample
N/A = not applicable

Table D-6
Groundwater Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																																		
				1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,2-Diphenylhydrazine	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,2'-Oxybis(1-Chloropropane)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Nitroaniline	4,6-Dinitro-2-methylphenol	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Benzidine
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SWMU-17																																						
BDC-05-01	BDC-05-01-860715	N	7/15/1986	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-01	BDC-05-01-870311	N	3/11/1987	--	--	--	--	--	--	0.7 U	0.6 U	3.3 U	2.8 U	6.3 U	1 U	2.7 U	1 U	1.7 U	1.2 U	3.2 U	3.1 U	1.7 U	1.9 U	6.6 U	1.3 U	1.8 U	1.7 U	1.4 U	0.6 U	3.7 U	2 U	1.1 U	0.2 U	--	0.9 U	--
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-860715	N	7/15/1986	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-02	BDC-05-02A-870311	N	3/11/1987	--	--	--	--	--	--	0.7 U	0.6 U	3.3 U	2.8 U	6.3 U	1 U	2.7 U	1 U	1.7 U	1.2 U	3.2 U	3.1 U	1.7 U	1.9 U	6.6 U	1.3 U	1.8 U	1.7 U	1.4 U	0.6 U	3.7 U	2 U	1.1 U	0.2 U	--	0.9 U	--
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	5 U	--	5 U	5 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	1 U	1 U	--	1 U	1 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	1 U	--	1.8 U	--	--	--	1.4 U	1.4 U	2.4 U	1.4 U	4 U	1 U	1.6 U	--	1.2 U	--	1.6 U	1.8 U	4.4 U	3 U	2.8 U	2.2 U	1.4 U	2.2 U	1 U	1.4 U	5.2 U	2.4 U	1.4 U	1.2 U	--	1.2 U	1 U
BDC-05-03	BDC-05-03-860715	N	7/15/1986	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-03	BDC-05-03-870311	N	3/11/1987	--	--	--	--	--	--	0.7 U	0.6 U	3.3 U	2.8 U	6.3 U	1 U	2.7 U	1 U	1.7 U	1.2 U	3.2 U	3.1 U	1.7 U	1.9 U	6.6 U	1.3 U	1.8 U	1.7 U	1.4 U	0.6 U	3.7 U	2 U	1.1 U	0.2 U	--	0.9 U	--
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	5 U	--	5 U	5 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-03	BDC-05-03-000531	N	5/31/2000	1 U	--	1.8 U	--	--	--	1.4 U	1.4 U	2.4 U	1.4 U	4 U	1 U	1.6 U	--	1.2 U	--	1.6 U	1.8 U	4.4 U	3 U	2.8 U	2.2 U	1.4 U	2.2 U	1 U	1.4 U	5.2 U	2.4 U	1.4 U	1.2 U	--	1.2 U	1 U
BDC-05-04	BDC-05-04-870204	N	2/4/1987	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-04	BDC-05-04-870311	N	3/11/1987	--	--	--	--	--	--	0.7 U	0.6 U	3.3 U	2.8 U	6.3 U	1 U	2.7 U	1 U	1.7 U	1.2 U	3.2 U	3.1 U	1.7 U	1.9 U	6.6 U	1.3 U	1.8 U	1.7 U	1.4 U	0.6 U	3.7 U	2 U	1.1 U	0.2 U	--	0.9 U	--
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	5 U	--	5 U	5 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-04	BDC-05-04-970519	N	5/19/1997	1 U	1 U	--	1 U	1 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-04	BDC-05-04-000531	N	5/31/2000	1 U	--	1.8 U	--	--	--	1.4 U	1.4 U	2.4 U	1.4 U	4 U	1 U	1.6 U	--	1.2 U	--	1.6 U	1.8 U	4.4 U	3 U	2.8 U	2.2 U	1.4 U	2.2 U	1 U	1.4 U	5.2 U	2.4 U	1.4 U	1.2 U	--	1.2 U	1 U
BDC-05-05	BDC-05-05-870204	N	2/4/1987	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	5 U	--	5 U	5 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-05	BDC-05-05-970519	N	5/19/1997	1 U	1 U	--	1 U	1 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-05	BDC-05-05-000531	N	5/31/2000	1 U	--	1.8 U	--	--	--	1.4 U	1.4 U	2.4 U	1.4 U	4 U	1 U	1.6 U	--	1.2 U	--	1.6 U	1.8 U	4.4 U	3 U	2.8 U	2.2 U	1.4 U	2.2 U	1 U	1.4 U	5.2 U	2.4 U	1.4 U	1.2 U	--	1.2 U	1 U
BDC-05-06	BDC-05-06-870204	N	2/4/1987	--	--	1 U	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-07	BDC-05-07-870311	N	3/11/1987	--	--	--	--	--	--	0.7 U	0.6 U	3.3 U	2.8 U	6.3 U	1 U	2.7 U	1 U	1.7 U	1.2 U	3.2 U	3.1 U	1.7 U	1.9 U	6.6 U	1.3 U	1.8 U	1.7 U	1.4 U	0.6 U	3.7 U	2 U	1.1 U	0.2 U	--	0.9 U	--
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	5 U	--	5 U	5 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-07	BDC-05-07-970519	N	5/19/1997	1 U	1 U	--	1 U	1 U	1 U	5 U	5 U	3 U	3 U	10 U	5 U	5 U	1 U	1 U	2 U	5 U	5 U	5 U	6 U	10 U	1 U	2 U	3 U	1 U	1 U	5 U	5 U	1 U	1 U	--	1 U	--
BDC-05-07	BDC-05-07-000531	N	5/31/2000	1 U	--	1.8 U	--	--	--	1.4 U	1.4 U	2.4 U	1.4 U	4 U	1 U	1.6 U	--	1.2 U	--	1.6 U	1.8 U	4.4 U	3 U	2.8 U	2.2 U	1.4 U	2.2 U	1 U	1.4 U	5.2 U	2.4 U	1.4 U	1.2 U	--	1.2 U	1 U

Table D-6
Groundwater Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																																		
				Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl Alcohol	bis(2-Chloroethoxy) Methane	bis(2-Chloroethyl) Ether	bis(2-Chloroisopropyl) Ether	bis(2-Ethylhexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl Phthalate	Dimethyl Phthalate	Di-N-Butyl Phthalate	Di-n-octyl Phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SWMU-17																																						
BDC-05-01	BDC-05-01-860715	N	7/15/1986	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10 J**	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
BDC-05-01	BDC-05-01-870311	N	3/11/1987	2.5 U	0.4 U	1 U	1.8 U	4.2 U	2.9 U	1 U	2.4 U	0.9 U	2.6 U	**3.7 J**	4 U	--	0.6 U	2 U	1.6 U	0.8 U	1 U	**2.3**	3.3 U	3.5 U	1.2 U	1.7 U	--	1.7 U	1.6 U	1.7 U	2.4 U	--	1.1 U	--	1.6 U	3.2 U
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-860715	N	7/15/1986	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
BDC-05-02	BDC-05-02A-870311	N	3/11/1987	2.5 U	1.8 U	1 U	2.9 U	4.2 U	--	1 U	2.4 U	0.9 U	2.6 U	3.9 U	4 U	--	0.6 U	2 U	1.6 U	0.8 U	1 U	1.5 U	3.3 U	3.5 U	1.2 U	1.7 U	--	1.7 U	1.6 U	1.7 U	2.4 U	--	1.1 U	--	1.6 U	3.2 U
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	5 U	2 U	1 U	1 U	--	1 U	--	2 U	1 U
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	**13**	1 U	1 U	1 U	1 U	1 U	**1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U	1 U	1 U	1 U	--	2 U	1 U
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	1.2 U	1 U	3 U	2 U	2.2 U	3 U	--	1 U	--	2.8 U	1.8 U	1.2 U	10 U	1.6 U	5.2 U	2.4 U	1.4 U	1.6 U	1.8 U	1.8 U	2.8 U	1.2 U	2.4 U	1 U	1.2 U	1.4 U	6.2 U	1 U	1 U	1.2 U	--	2.8 U	--
BDC-05-03	BDC-05-03-860715	N	7/15/1986	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
BDC-05-03	BDC-05-03-870311	N	3/11/1987	2.5 U	0.4 U	1 U	1.8 U	4.2 U	2.9 U	1 U	2.4 U	0.9 U	2.6 U	3.9 U	4 U	--	0.6 U	2 U	1.6 U	0.8 U	1 U	**2.2**	3.3 U	3.5 U	1.2 U	1.7 U	--	1.7 U	1.6 U	1.7 U	2.4 U	--	1.1 U	--	1.6 U	3.2 U
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-951031	N	10/31/1995	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	5 U	2 U	1 U	1 U	--	1 U	--	2 U	1 U
BDC-05-03	BDC-05-03-000531	N	5/31/2000	1.2 U	1 U	3 U	2 U	2.2 U	3 U	--	1 U	--	2.8 U	1.8 U	1.2 U	10 U	1.6 U	5.2 U	2.4 U	1.4 U	1.6 U	1.8 U	1.8 U	2.8 U	1.2 U	2.4 U	1 U	1.2 U	1.4 U	6.2 U	1 U	1 U	1.2 U	--	2.8 U	--
BDC-05-04	BDC-05-04-870204	N	2/4/1987	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
BDC-05-04	BDC-05-04-870311	N	3/11/1987	2.5 U	0.4 U	1 U	1.8 U	4.2 U	2.9 U	1 U	2.4 U	0.9 U	2.6 U	3.9 U	4 U	--	0.6 U	2 U	1.6 U	0.8 U	1 U	**1.9**	3.3 U	3.5 U	1.2 U	1.7 U	--	1.7 U	1.6 U	1.7 U	2.4 U	--	1.1 U	--	1.6 U	3.2 U
BDC-05-04	BDC-05-04-951031	N	10/31/1995	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	5 U	2 U	1 U	1 U	--	1 U	--	2 U	1 U
BDC-05-04	BDC-05-04-970519	N	5/19/1997	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	**7.2**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	--	2 U	1 U
BDC-05-04	BDC-05-04-000531	N	5/31/2000	1.2 U	1 U	3 U	2 U	2.2 U	3 U	--	1 U	--	2.8 U	1.8 U	1.2 U	10 U	1.6 U	5.2 U	2.4 U	1.4 U	1.6 U	1.8 U	1.8 U	2.8 U	1.2 U	2.4 U	1 U	1.2 U	1.4 U	6.2 U	1 U	1 U	1.2 U	--	2.8 U	--
BDC-05-05	BDC-05-05-870204	N	2/4/1987	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
BDC-05-05	BDC-05-05-951025	N	10/25/1995	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	5 U	2 U	1 U	1 U	--	1 U	--	2 U	1 U
BDC-05-05	BDC-05-05-970519	N	5/19/1997	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	--	--	**13**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	--	2 U	1 U
BDC-05-05	BDC-05-05-000531	N	5/31/2000	1.2 U	1 U	3 U	2 U	2.2 U	3 U	--	1 U	--	2.8 U	1.8 U	1.2 U	10 U	1.6 U	5.2 U	2.4 U	1.4 U	1.6 U	1.8 U	1.8 U	2.8 U	1.2 U	2.4 U	1 U	1.2 U	1.4 U	6.2 U	1 U	1 U	1.2 U	--	2.8 U	--
BDC-05-06	BDC-05-06-870204	N	2/4/1987	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7**	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U
BDC-05-07	BDC-05-07-870311	N	3/11/1987	2.5 U	0.4 U	1 U	1.8 U	4.2 U	2.9 U	1 U	2.4 U	0.9 U	2.6 U	**3 J**	4 U	--	0.6 U	2 U	1.6 U	0.8 U	1 U	**2.3 J**	3.3 U	3.5 U	1.2 U	1.7 U	--	1.7 U	1.6 U	1.7 U	2.4 U	--	1.1 U	--	1.6 U	3.2 U
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	--	--	--	--	--	--	--	--	--	6 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-951031	N	10/31/1995	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	5 U	2 U	1 U	1 U	--	1 U	--	2 U	1 U
BDC-05-07	BDC-05-07-970519	N	5/19/1997	1 U	1 U	1 U	1 U	1 U	10 U	5 U	1 U	2 U	--	**10**	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	1 U	1 U	1 U	1 U	1 U	2 U	5 U	2 U	1 U	1 U	1 U	1 U	--	2 U	1 U
BDC-05-07	BDC-05-07-000531	N	5/31/2000	1.2 U	1 U	3 U	2 U	2.2 U	3 U	--	1 U	--	2.8 U	1.8 U	1.2 U	10 U	1.6 U	5.2 U	2.4 U	1.4 U	1.6 U	1.8 U	1.8 U	2.8 U	1.2 U	2.4 U	1 U	1.2 U	1.4 U	6.2 U	1 U	1 U	1.2 U	--	2.8 U	--

Table D-6
Groundwater Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction, Unit of Meas.				
				Pentachlorophenol	Phenanthrene	Phenol	p-Nitrosodiphenylamine	Pyrene
				N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L
SWMU-17								
BDC-05-01	BDC-05-01-860715	N	7/15/1986	1 U	1 U	1 U	--	1 U
BDC-05-01	BDC-05-01-870311	N	3/11/1987	1.3 U	1.7 U	0.8 U	--	3.2 U
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	--	--	--	--
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	--	--	--	--
BDC-05-02	BDC-05-02-860715	N	7/15/1986	1 U	1 U	1 U	--	1 U
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	1 U	1 U	1 U	--	1 U
BDC-05-02	BDC-05-02A-870311	N	3/11/1987	1.3 U	1.7 U	0.8 U	--	3.2 U
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	--	--	--	--
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	--	--	--	--
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	5 U	1 U	2 U	--	1 U
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	5 U	1 U	2 U	--	1 U
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	1 U	1 U	--	1.8 U	3 U
BDC-05-03	BDC-05-03-860715	N	7/15/1986	1 U	1 U	1 U	--	1 U
BDC-05-03	BDC-05-03-870311	N	3/11/1987	1.3 U	1.7 U	0.8 U	--	3.2 U
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	--	--	--	--
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	--	--	--	--
BDC-05-03	BDC-05-03-951031	N	10/31/1995	5 U	1 U	2 U	--	1 U
BDC-05-03	BDC-05-03-000531	N	5/31/2000	1 U	1 U	--	1.8 U	3 U
BDC-05-04	BDC-05-04-870204	N	2/4/1987	1 U	1 U	1 U	--	1 U
BDC-05-04	BDC-05-04-870311	N	3/11/1987	1.3 U	1.7 U	0.8 U	--	3.2 U
BDC-05-04	BDC-05-04-951031	N	10/31/1995	5 U	1 U	2 U	--	1 U
BDC-05-04	BDC-05-04-970519	N	5/19/1997	5 U	1 U	2 U	--	1 U
BDC-05-04	BDC-05-04-000531	N	5/31/2000	1 U	1 U	--	1.8 U	3 U
BDC-05-05	BDC-05-05-870204	N	2/4/1987	1 U	1 U	1 U	--	1 U
BDC-05-05	BDC-05-05-951025	N	10/25/1995	5 U	1 U	2 U	--	1 U
BDC-05-05	BDC-05-05-970519	N	5/19/1997	5 U	1 U	2 U	--	1 U
BDC-05-05	BDC-05-05-000531	N	5/31/2000	1 U	1 U	--	1.8 U	3 U
BDC-05-06	BDC-05-06-870204	N	2/4/1987	1 U	1 U	1 U	--	1 U
BDC-05-07	BDC-05-07-870311	N	3/11/1987	1.3 U	1.7 U	0.8 U	--	3.2 U
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	--	--	--	--
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	--	--	--	--
BDC-05-07	BDC-05-07-951031	N	10/31/1995	5 U	1 U	2 U	--	1 U
BDC-05-07	BDC-05-07-970519	N	5/19/1997	5 U	1 U	2 U	--	1 U
BDC-05-07	BDC-05-07-000531	N	5/31/2000	1 U	1 U	--	1.8 U	3 U

Table D-6
Groundwater Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																																	
				1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,2-Diphenylhydrazine	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2,2'-Oxybis(1-Chloropropane)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitroaniline	2-Nitrophenol	3,3'-Dichlorobenzidine	3-Nitroaniline	4,6-Dinitro-2-methylphenol	4-Bromophenyl phenyl ether	4-Chloro-3-methylphenol	4-Chloroaniline	4-Chlorophenyl phenyl ether	4-Methylphenol	4-Nitroaniline	4-Nitrophenol	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Benzidine
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SWMU-20																																					
BDC-MW-10A	10A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-11A	11A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-12A	12A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	**1.2 J**	--	--	--	--
BDC-MW-13A	13A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-14A	14A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-15A	15A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-16A	16A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-6A	6A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-6B	6B1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-7A	7A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-8A	8A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	**0.6 J**	--	--	--	--
BDC-MW-9A	9A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-9A	9A1A-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
BDC-MW-9B	9B1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--
TS-1	TS-1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.1 J**	**2.2 J**	--	--	--	--	--	--	--	--	--	--	**1 J**	--	--	ND	--	--	--	--
TS-2	TS-2-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	**0.5 J**	--	--	**1.4 J**	--	--	--	--
TS-3	TS-3-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	ND	--	--	**0.7 J**	--	--	--	--
Museum of Flight																																					
B-1	B-1	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2	B-2	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3	B-3	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4	B-4	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	B-5	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	B-6	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	B-7	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-8	B-8	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-9	B-9	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10	B-10	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-6
Groundwater Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																																			
				Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl Alcohol	bis(2-Chloroethoxy) Methane	bis(2-Chloroethyl) Ether	bis(2-Chloroisopropyl) Ether	bis(2-Ethylhexyl) Phthalate	Butyl Benzyl Phthalate	Carbazole	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Diethyl Phthalate	Dimethyl Phthalate	Di-N-Butyl Phthalate	Di-n-octyl Phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	Naphthalene	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SWMU-20																																							
BDC-MW-10A	10A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-11A	11A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-12A	12A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	**0.6 J**	--	--	--	--
BDC-MW-13A	13A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-14A	14A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-15A	15A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	**0.4 J**	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-16A	16A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-6A	6A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-6B	6B1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-7A	7A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-8A	8A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	**0.4 J**	--	--	ND	ND	**1.6 J**	**0.4 J**	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-9A	9A1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-9A	9A1A-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-9B	9B1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	ND	--	--	--	--
TS-1	TS-1-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	**3.2 J**	--	--	--	--
TS-2	TS-2-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	**2.7 J**	--	--	--	**0.4 J**	--	--	**76**	**2.7 J**	ND	**0.6 J**	--	--	--	--	--	--	--	**7.5 J**	--	--	--	--
TS-3	TS-3-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	**0.6 J**	--	--	--	ND	--	--	**42**	ND	ND	ND	--	--	--	--	--	--	--	**11**	--	--	--	--
Museum of Flight																																							
B-1	B-1	N	1/4/2001	20 U	20 U	20 U	--	20 U	--	--	--	--	--	--	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--
B-2	B-2	N	1/4/2001	20 U	20 U	20 U	--	20 U	--	--	--	--	--	--	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--
B-3	B-3	N	1/4/2001	20 U	20 U	20 U	--	20 U	--	--	--	--	--	--	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--
B-4	B-4	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	B-5	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	B-6	N	1/4/2001	20 U	20 U	20 U	--	20 U	--	--	--	--	--	--	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--
B-7	B-7	N	1/4/2001	20 U	20 U	20 U	--	20 U	--	--	--	--	--	--	--	--	20 U	20 U	--	--	--	--	--	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--
B-8	B-8	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-9	B-9	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10	B-10	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-6
Groundwater Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction, Unit of Meas.				
				Pentachlorophenol	Phenanthrene	Phenol	p-Nitrosodiphenylamine	Pyrene
				N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L
SWMU-20								
BDC-MW-10A	10A1-890801	N	8/1/1989	ND	ND	**1.5 J**	--	ND
BDC-MW-11A	11A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-12A	12A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-13A	13A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-14A	14A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-15A	15A1-890801	N	8/1/1989	ND	ND	ND	--	**0.3 J**
BDC-MW-16A	16A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-6A	6A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-6B	6B1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-7A	7A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-8A	8A1-890801	N	8/1/1989	ND	ND	ND	--	**1 J**
BDC-MW-9A	9A1-890801	N	8/1/1989	ND	ND	ND	--	ND
BDC-MW-9A	9A1A-890801	N	8/1/1989	ND	ND	ND	--	**ND**
BDC-MW-9B	9B1-890801	N	8/1/1989	ND	ND	**2.5 J**	--	ND
TS-1	TS-1-890801	N	8/1/1989	ND	ND	**5.4 J**	--	ND
TS-2	TS-2-890801	N	8/1/1989	**3.3 J**	**0.8 J**	**1.7 J**	--	ND
TS-3	TS-3-890801	N	8/1/1989	ND	ND	ND	--	ND
Museum of Flight								
B-1	B-1	N	1/4/2001	--	--	--	--	--
B-2	B-2	N	1/4/2001	--	--	--	--	--
B-3	B-3	N	1/4/2001	--	--	--	--	--
B-4	B-4	N	1/4/2001	--	--	--	--	--
B-5	B-5	N	1/4/2001	--	--	--	--	--
B-6	B-6	N	1/4/2001	--	--	--	--	--
B-7	B-7	N	1/4/2001	--	--	--	--	--
B-8	B-8	N	1/4/2001	--	--	--	--	--
B-9	B-9	N	1/4/2001	--	--	--	--	--
B-10	B-10	N	1/4/2001	--	--	--	--	--

Table D-6
Groundwater Semivolatile Organic Compound Analytical Results
Boeing Developmental Center

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
Bold text indicates detected analyte

Abbreviations/Acronyms:

-- = not analyzed
µg/L = micrograms per liter
FD = field duplicate
ID = Identification
N = primary sample
N/A = not applicable

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
AOC-01/02							
DC952W2	DC952-W2	N	10/30/1990	--	--	--	**18200**
9-52 MW-1	9-52 MW1-010611	N	6/11/2001	250 U	250 U	500 U	--
9-52 MW-1	DC952-MW1-011203	N	12/3/2001	250 U	250 U	500 U	--
9-52 MW-2	9-52 MW2-010611	N	6/11/2001	250 U	250 U	500 U	--
9-52 MW-2	DC952-MW2-011203	N	12/3/2001	250 U	250 U	500 U	--
9-52 MW-3	9-52 MW3-010611	N	6/11/2001	250 U	250 U	500 U	--
9-52 MW-3	DC952-MW3-011203	N	12/3/2001	250 U	250 U	500 U	--
DC-9-52-1	DC-9-52-1-951101	N	11/1/1995	250 U	--	--	--
DC-9-52-1	DC-9-52-1-970515	N	5/15/1997	250 U	--	--	--
DC-9-52-1	DC-9-52-1-980609	N	6/9/1998	250 U	--	--	--
DC-9-52-1	DC-9-52-1-991121	N	11/21/1999	250 U	--	--	--
DC-9-52-1	DC-9-52-1-001206	N	12/6/2000	250 U	**2970**	500 U	--
DC-9-52-1	DC-9-52-1-010611	N	6/11/2001	250 U	250 U	500 U	--
DC-9-52-1	DC-9-52-1-011203	N	12/3/2001	250 U	250 U	500 U	--
DC-9-52-1	DC-9-52-1-020604	N	6/4/2002	250 U	250 U	500 U	--
DC-9-52-2	DC-9-52-2-951101	N	11/1/1995	250 U	--	--	--
DC-9-52-2	DC-9-52-2-970515	N	5/15/1997	250 U	--	--	--
DC-9-52-2	DC-9-52-2-980609	N	6/9/1998	250 U	--	--	--
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	250 U	250 U	--	--
DC-9-52-2	DC-9-52-2-001206	N	12/6/2000	250 U	**400**	500 U	--
DC-9-52-2	DC-9-52-2-010611	N	6/11/2001	250 U	250 U	500 U	--
DC-9-52-2	DC-9-52-2-011203	N	12/3/2001	250 U	250 U	500 U	--
DC-9-52-2	DC-9-52-2-020604	N	6/4/2002	250 U	250 U	500 U	--
DC-9-52-3	DC-9-52-3-951101	N	11/1/1995	250 U	--	--	--
DC-9-52-3	DC-9-52-3-970515	N	5/15/1997	250 U	--	--	--
DC-9-52-3	DC-9-52-3-980609	N	6/9/1998	250 U	--	--	--
DC-9-52-3	DC-9-52-3-991121	N	11/21/1999	250 U	--	--	--
DC-9-52-3	DC-9-52-3-001206	N	12/6/2000	250 U	**840**	500 U	--
DC-9-52-3	DC-9-52-3-010611	N	6/11/2001	250 U	250 U	500 U	--
DC-9-52-3	DC-9-52-3-011203	N	12/3/2001	250 U	250 U	500 U	--
DC-9-52-3	DC-9-52-3-020604	N	6/4/2002	250 U	250 U	500 U	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
AOC-03/04							
BDC-MW-21A	MW-21A-921022	N	10/22/1992	--	--	--	1000 U
BDC-MW-21A	MW-21A-000601	N	6/1/2000	--	250 U	500 U	--
BDC-MW-21A	MW-21A-001204	N	12/4/2000	--	**2010**	--	--
BDC-MW-21A	MW-21A-010627	N	6/27/2001	--	250 U	500 U	--
BDC-MW-21A	MW-21A-011205	N	12/5/2001	--	250 U	500 U	--
BDC-MW-21A	MW-21A-020605	N	6/5/2002	--	250 U	500 U	--
BDC-MW-21A	MW-21A-021203	N	12/3/2002	--	250 U	500 U	--
BDC-MW-21A	MW-21A-060515	N	5/15/2006	250 U	--	--	--
BDC-MW-21C	MW-21C-010627	N	6/27/2001	--	250 U	500 U	--
BDC-MW-21C	MW-21C-011205	N	12/5/2001	--	250 U	500 U	--
BDC-MW-21C	MW-21C-020605	N	6/5/2002	--	250 U	500 U	--
BDC-MW-21C	MW-21C-021203	N	12/3/2002	--	250 U	500 U	--
AOC-05							
BDC-101	BDC-101-010611	N	6/11/2001	**2998.2**	--	--	--
BDC-101	BDC-101-010904	N	9/4/2001	**1473.27**	--	--	--
BDC-101	BDC-101-011203	N	12/3/2001	**6500**	--	--	--
BDC-101	BDC-101-020313	N	3/13/2002	250 U	--	--	--
BDC-101	BDC-101-020429	N	4/29/2002	250 U	--	--	--
BDC-101	BDC-101-020603	N	6/3/2002	250 U	--	--	--
BDC-101	BDC-101-020701	N	7/1/2002	250 U	--	--	--
BDC-101	BDC-101-020801	N	8/1/2002	250 U	--	--	--
BDC-101	BDC-101-021202	N	12/2/2002	**610**	--	--	--
BDC-101	BDC-101-030310	N	3/10/2003	250 U	--	--	--
BDC-101	BDC-101-030603	N	6/3/2003	250 U	--	--	--
BDC-101	BDC-101-031119	N	11/19/2003	**420 J**	--	--	--
BDC-101	BDC-101-040428	N	4/28/2004	250 U	--	--	--
BDC-101	BDC-101-041018	N	10/18/2004	**640**	--	--	--
BDC-101	BDC-101-050510	N	5/10/2005	250 U	--	--	--
BDC-101	BDC-101-051110	N	11/10/2005	**250**	--	--	--
BDC-101	BDC-101-060515	N	5/15/2006	250 U	--	--	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-101	BDC-101-061120	N	11/20/2006	**1100**	--	--	--
BDC-101	BDC-101-070220	N	2/20/2007	250 U	--	--	--
BDC-101	BDC-101-070319	N	3/19/2007	250 U	--	--	--
BDC-101	BDC-101-070424	N	4/24/2007	250 U	--	--	--
BDC-101	BDC-101-070517	N	5/17/2007	250 U	--	--	--
BDC-101	BDC-101-071126	N	11/26/2007	250 U	--	--	--
BDC-101	BDC-101-080218	N	2/18/2008	250 U	--	--	--
BDC-101	BDC-101-080327	N	3/27/2008	250 U	--	--	--
BDC-101	BDC-101-080515	N	5/15/2008	250 U	--	--	--
BDC-101	BDC-101-080716	N	7/16/2008	250 U	--	--	--
BDC-101	BDC-101-080915	N	9/15/2008	250 U	--	--	--
BDC-101	BDC-101-081120	N	11/20/2008	**440**	--	--	--
BDC-101	BDC-101-090116	N	1/16/2009	250 U	--	--	--
BDC-101	BDC-101-090211	N	2/11/2009	250 U	--	--	--
BDC-101	BDC-101-090309	N	3/9/2009	250 U	--	--	--
BDC-101	BDC-101-090416	N	4/16/2009	250 U	--	--	--
BDC-101	BDC-101-090514	N	5/14/2009	250 U	--	--	--
BDC-101	BDC-101-090717	N	7/17/2009	250 U	--	--	--
BDC-101	BDC-101-090909	N	9/9/2009	250 U	--	--	--
BDC-101	BDC-101-091112	N	11/12/2009	**350**	--	--	--
BDC-101	BDC-101-100217	N	2/17/2010	250 U	--	--	--
BDC-101	BDC-101-100517	N	5/17/2010	250 U	--	--	--
BDC-101	BDC-101-100816	N	8/16/2010	250 U	--	--	--
BDC-101	BDC-101-101108	N	11/8/2010	250 U	--	--	--
BDC-101	BDC-101-110216	N	2/16/2011	250 U	--	--	--
BDC-101	BDC-101-110503	N	5/3/2011	250 U	--	--	--
BDC-101	BDC-101-110801	N	8/1/2011	250 U	--	--	--
BDC-101	BDC-101-111101	N	11/1/2011	250 U	--	--	--
BDC-101	BDC-101-120219	N	2/19/2012	250 U	--	--	--
BDC-101	BDC-101-120503	N	5/3/2012	250 U	--	--	--
BDC-101	BDC-101-120904	N	9/4/2012	250 U	--	--	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
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				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-101	BDC-101-121113	N	11/13/2012	250 U	--	--	--
BDC-101	BDC-101-130220	N	2/20/2013	250 U	--	--	--
BDC-101	BDC-101-130520	N	5/20/2013	250 U	--	--	--
BDC-101	BDC-101-130828	N	8/28/2013	250 U	--	--	--
BDC-101	BDC-101-131119	N	11/19/2013	250 U	--	--	--
BDC-101	BDC-101-140211	N	2/11/2014	250 U	--	--	--
BDC-101	BDC-101-140506	N	5/6/2014	250 U	--	--	--
BDC-101	BDC-101-140807	N	8/7/2014	250 U	--	--	--
BDC-101	BDC-101-141104	N	11/4/2014	250 U	--	--	--
BDC-101	BDC-101-150121	N	1/21/2015	250 U	--	--	--
BDC-101	BDC-101-150428	N	4/28/2015	250 U	--	--	--
BDC-101	BDC-101-150720	N	7/20/2015	250 U	--	--	--
BDC-101	BDC-101-151026	N	10/26/2015	250 U	--	--	--
BDC-101	BDC-101-160127	N	1/27/2016	250 U	--	--	--
BDC-101	BDC-101-160413	N	4/13/2016	250 U	--	--	--
BDC-101	BDC-101-160809	N	8/9/2016	250 U	--	--	--
BDC-101	BDC-101-161101	N	11/1/2016	250 U	--	--	--
BDC-101	BDC-101-170207	N	2/7/2017	250 U	--	--	--
BDC-101	BDC-101-170503	N	5/3/2017	250 U	--	--	--
BDC-101	BDC-101-170801	N	8/1/2017	250 U	--	--	--
BDC-101	BDC-101-171107	N	11/7/2017	250 U	--	--	--
BDC-101	BDC-101-180205	N	2/5/2018	100 U	--	--	--
BDC-101	BDC-101-180501	N	5/1/2018	100 U	--	--	--
BDC-101	BDC-101-180806	N	8/6/2018	100 U	--	--	--
BDC-101	BDC-101-181105	N	11/5/2018	100 U	--	--	--
BDC-101	BDC-101-190206	N	2/6/2019	100 U	--	--	--
BDC-101	BDC-101-190502	N	5/2/2019	100 U	--	--	--
BDC-101	BDC-101-191105	N	11/5/2019	100 U	--	--	--
BDC-102	BDC-102-010613	N	6/13/2001	**550.85**	--	--	--
BDC-102	BDC-102-010904	N	9/4/2001	**384.49**	--	--	--
BDC-102	BDC-102-011203	N	12/3/2001	**1600**	--	--	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
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				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-102	BDC-102-020313	N	3/13/2002	**500**	--	--	--
BDC-102	BDC-102-020429	N	4/29/2002	**330**	--	--	--
BDC-102	BDC-102-020603	N	6/3/2002	250 U	--	--	--
BDC-102	BDC-102-020701	N	7/1/2002	**250**	--	--	--
BDC-102	BDC-102-020801	N	8/1/2002	250 U	--	--	--
BDC-102	BDC-102-021202	N	12/2/2002	250 U	--	--	--
BDC-102	BDC-102-030310	N	3/10/2003	**260**	--	--	--
BDC-102	BDC-102-030603	N	6/3/2003	250 U	--	--	--
BDC-102	BDC-102-031119	N	11/19/2003	**990 J**	--	--	--
BDC-102	BDC-102-040428	N	4/28/2004	**400**	--	--	--
BDC-102	BDC-102-041018	N	10/18/2004	**330**	--	--	--
BDC-102	BDC-102-050510	N	5/10/2005	250 U	--	--	--
BDC-102	BDC-102-051110	N	11/10/2005	250 U	--	--	--
BDC-102	BDC-102-060515	N	5/15/2006	250 U	--	--	--
BDC-102	BDC-102-061120	N	11/20/2006	250 U	--	--	--
BDC-102	BDC-102-070220	N	2/20/2007	250 U	--	--	--
BDC-102	BDC-102-070319	N	3/19/2007	250 U	--	--	--
BDC-102	BDC-102-070424	N	4/24/2007	**530**	--	--	--
BDC-102	BDC-102-070517	N	5/17/2007	250 U	--	--	--
BDC-102	BDC-102-071126	N	11/26/2007	250 U	--	--	--
BDC-102	BDC-102-080218	N	2/18/2008	250 U	--	--	--
BDC-102	BDC-102-080327	N	3/27/2008	250 U	--	--	--
BDC-102	BDC-102-080515	N	5/15/2008	250 U	--	--	--
BDC-102	BDC-102-080716	N	7/16/2008	250 U	--	--	--
BDC-102	BDC-102-080915	N	9/15/2008	250 U	--	--	--
BDC-102	BDC-102-081120	N	11/20/2008	250 U	--	--	--
BDC-102	BDC-102-090116	N	1/16/2009	250 U	--	--	--
BDC-102	BDC-102-090211	N	2/11/2009	250 U	--	--	--
BDC-102	BDC-102-090309	N	3/9/2009	250 U	--	--	--
BDC-102	BDC-102-090416	N	4/16/2009	250 U	--	--	--
BDC-102	BDC-102-090514	N	5/14/2009	250 U	--	--	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
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				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-102	BDC-102-090717	N	7/17/2009	250 U	--	--	--
BDC-102	BDC-102-090909	N	9/9/2009	250 U	--	--	--
BDC-102	BDC-102-091112	N	11/12/2009	250 U	--	--	--
BDC-102	BDC-102-100217	N	2/17/2010	250 U	--	--	--
BDC-102	BDC-102-100517	N	5/17/2010	250 U	--	--	--
BDC-102	BDC-102-100816	N	8/16/2010	250 U	--	--	--
BDC-102	BDC-102-101108	N	11/8/2010	250 U	--	--	--
BDC-102	BDC-102-110216	N	2/16/2011	250 U	--	--	--
BDC-102	BDC-102-110503	N	5/3/2011	250 U	--	--	--
BDC-102	BDC-102-110801	N	8/1/2011	250 U	--	--	--
BDC-102	BDC-102-111101	N	11/1/2011	250 U	--	--	--
BDC-102	BDC-102-120219	N	2/19/2012	250 U	--	--	--
BDC-102	BDC-102-120503	N	5/3/2012	250 U	--	--	--
BDC-102	BDC-102-120904	N	9/4/2012	250 U	--	--	--
BDC-102	BDC-102-121113	N	11/13/2012	250 U	--	--	--
BDC-102	BDC-102-130220	N	2/20/2013	250 U	--	--	--
BDC-102	BDC-102-130520	N	5/20/2013	250 U	--	--	--
BDC-102	BDC-102-130828	N	8/28/2013	250 U	--	--	--
BDC-102	BDC-102-131119	N	11/19/2013	250 U	--	--	--
BDC-102	BDC-102-140211	N	2/11/2014	250 U	--	--	--
BDC-102	BDC-102-140506	N	5/6/2014	250 U	--	--	--
BDC-102	BDC-102-140807	N	8/7/2014	250 U	--	--	--
BDC-102	BDC-102-141104	N	11/4/2014	250 U	--	--	--
BDC-102	BDC-102-150121	N	1/21/2015	250 U	--	--	--
BDC-102	BDC-102-150428	N	4/28/2015	250 U	--	--	--
BDC-102	BDC-102-150720	N	7/20/2015	250 U	--	--	--
BDC-102	BDC-102-151026	N	10/26/2015	250 U	--	--	--
BDC-102	BDC-102-160127	N	1/27/2016	250 U	--	--	--
BDC-102	BDC-102-160413	N	4/13/2016	250 U	--	--	--
BDC-102	BDC-102-160809	N	8/9/2016	250 U	--	--	--
BDC-102	BDC-102-161101	N	11/1/2016	250 U	--	--	--
BDC-102	BDC-102-170207	N	2/7/2017	250 U	--	--	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
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				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-102	BDC-102-170503	N	5/3/2017	250 U	--	--	--
BDC-102	BDC-102-170801	N	8/1/2017	250 U	--	--	--
BDC-102	BDC-102-171107	N	11/7/2017	250 U	--	--	--
BDC-102	BDC-102-180205	N	2/5/2018	100 U	--	--	--
BDC-102	BDC-102-180501	N	5/1/2018	100 U	--	--	--
BDC-102	BDC-102-180806	N	8/6/2018	100 U	--	--	--
BDC-102	BDC-102-181105	N	11/5/2018	100 U	--	--	--
BDC-102	BDC-102-190206	N	2/6/2019	**192**	--	--	--
BDC-102	BDC-102-190502	N	5/2/2019	100 U	--	--	--
BDC-102	BDC-102-191105	N	11/5/2019	100 U	--	--	--
BDC-103	BDC-103-010614	N	6/14/2001	**177356.4**	--	--	--
BDC-103	BDC-103-010904	N	9/4/2001	**123362**	--	--	--
BDC-103	BDC-103-011203	N	12/3/2001	**120000**	--	--	--
BDC-103	BDC-103-020313	N	3/13/2002	**200000**	--	--	--
BDC-103	BDC-103-020429	N	4/29/2002	**200000**	--	--	--
BDC-103	BDC-103-020603	N	6/3/2002	**200000**	--	--	--
BDC-103	BDC-103-020701	N	7/1/2002	**240000**	--	--	--
BDC-103	BDC-103-020801	N	8/1/2002	**270000**	--	--	--
BDC-103	BDC-103-021202	N	12/2/2002	**250000**	--	--	--
BDC-103	BDC-103-030310	N	3/10/2003	**180000**	--	--	--
BDC-103	BDC-103-030603	N	6/3/2003	**220000**	--	--	--
BDC-103	BDC-103-031119	N	11/19/2003	**180000**	--	--	--
BDC-103	BDC-103-040428	N	4/28/2004	**160000**	--	--	--
BDC-103	BDC-103-041018	N	10/18/2004	**140000**	--	--	--
BDC-103	BDC-103-050510	N	5/10/2005	**110000**	--	--	--
BDC-103	BDC-103-051110	N	11/10/2005	**90000**	--	--	--
BDC-103	BDC-103-060515	N	5/15/2006	**84000**	--	--	--
BDC-103	BDC-103-DUP-060515	FD	5/15/2006	**86000**	--	--	--
BDC-103	BDC-103-061120	N	11/20/2006	**51000**	--	--	--
BDC-103	BDC-103-070220	N	2/20/2007	**26000**	--	--	--
BDC-103	BDC-103-070319	N	3/19/2007	**30000**	--	--	--
BDC-103	BDC-103-070424	N	4/24/2007	**36000**	--	--	--

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				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-103-070517	N	5/17/2007	**77000**	--	--	--
BDC-103	BDC-103-071126	N	11/26/2007	**190000**	--	--	--
BDC-103	BDC-103-080218	N	2/18/2008	**66000**	--	--	--
BDC-103	BDC-103-080327	N	3/27/2008	**84000**	--	--	--
BDC-103	BDC-103-080515	N	5/15/2008	**91000**	--	--	--
BDC-103	BDC-103-080716	N	7/16/2008	**79000**	--	--	--
BDC-103	BDC-103-080915	N	9/15/2008	**110000**	--	--	--
BDC-103	BDC-103-081120	N	11/20/2008	**47000**	--	--	--
BDC-103	BDC-103-090116	N	1/16/2009	**11000**	--	--	--
BDC-103	BDC-103-090211	N	2/11/2009	**36000**	--	--	--
BDC-103	BDC-103-090309	N	3/9/2009	**27000**	--	--	--
BDC-103	BDC-103-090416	N	4/16/2009	**30000**	--	--	--
BDC-103	BDC-103-090514	N	5/14/2009	**30000**	--	--	--
BDC-103	BDC-103-090717	N	7/17/2009	**19000**	--	--	--
BDC-103	BDC-103-090909	N	9/9/2009	**21000**	--	--	--
BDC-103	BDC-103-091112	N	11/12/2009	**24000**	--	--	--
BDC-103	BDC-103-100217	N	2/17/2010	**730**	--	--	--
BDC-103	BDC-103-100517	N	5/17/2010	**3100**	--	--	--
BDC-103	BDC-103-100816	N	8/16/2010	**8000**	--	--	--
BDC-103	BDC-103-101108	N	11/8/2010	**6300**	--	--	--
BDC-103	BDC-103-110216	N	2/16/2011	**280**	--	--	--
BDC-103	BDC-103-110503	N	5/3/2011	250 U	--	--	--
BDC-103	BDC-103-110801	N	8/1/2011	**300**	--	--	--
BDC-103	BDC-103-111101	N	11/1/2011	**33000**	--	--	--
BDC-103	BDC-103-120219	N	2/19/2012	**2200**	--	--	--
BDC-103	BDC-103-120503	N	5/3/2012	250 U	--	--	--
BDC-103	BDC-103-120904	N	9/4/2012	**720**	--	--	--
BDC-103	BDC-103-121113	N	11/13/2012	**4500**	--	--	--
BDC-103	BDC-103-130220	N	2/20/2013	250 U	--	--	--
BDC-103	BDC-103-130520	N	5/20/2013	250 U	--	--	--
BDC-103	BDC-103-130828	N	8/28/2013	**2000**	--	--	--
BDC-103	BDC-103-131119	N	11/19/2013	**5900**	--	--	--

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				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-103-140211	N	2/11/2014	250 U	--	--	--
BDC-103	BDC-103-140506	N	5/6/2014	250 U	--	--	--
BDC-103	BDC-103-140807	N	8/7/2014	250 U	--	--	--
BDC-103	BDC-103-141104	N	11/4/2014	250 U	--	--	--
BDC-103	BDC-103-150121	N	1/21/2015	250 U	--	--	--
BDC-103	BDC-103-150428	N	4/28/2015	250 U	--	--	--
BDC-103	BDC-103-150720	N	7/20/2015	250 U	--	--	--
BDC-103	BDC-103-151026	N	10/26/2015	**19000**	--	--	--
BDC-103	BDC-103-160127	N	1/27/2016	250 U	--	--	--
BDC-103	BDC-103-160413	N	4/13/2016	250 U	--	--	--
BDC-103	BDC-103-160809	N	8/9/2016	**1700**	--	--	--
BDC-103	BDC-103-DUP-160809	FD	8/9/2016	**1700**	--	--	--
BDC-103	BDC-103-161101	N	11/1/2016	**4500**	--	--	--
BDC-103	BDC-103-DUP-161101	FD	11/1/2016	**3700**	--	--	--
BDC-103	BDC-103-170207	N	2/7/2017	250 U	--	--	--
BDC-103	BDC-103-170503	N	5/3/2017	250 U	--	--	--
BDC-103	BDC-DUP2-170503	FD	5/3/2017	250 U	--	--	--
BDC-103	BDC-103-170801	N	8/1/2017	250 U	--	--	--
BDC-103	BDC-DUP1-170801	FD	8/1/2017	250 U	--	--	--
BDC-103	BDC-103-171107	N	11/7/2017	250 U	--	--	--
BDC-103	BDC-DUP2-171107	FD	11/7/2017	250 U	--	--	--
BDC-103	BDC-DUP1-180205	FD	2/5/2018	100 U	--	--	--
BDC-103	BDC-103-180205	N	2/5/2018	100 U	--	--	--
BDC-103	BDC-DUP2-180501	FD	5/1/2018	100 U	--	--	--
BDC-103	BDC-103-180501	N	5/1/2018	100 U	--	--	--
BDC-103	BDC-DUP1-180806	FD	8/6/2018	100 U	--	--	--
BDC-103	BDC-103-180806	N	8/6/2018	100 U	--	--	--
BDC-103	BDC-103-181105	N	11/5/2018	**113**	--	--	--
BDC-103	BDC-DUP2-181105	FD	11/5/2018	**112**	--	--	--
BDC-103	BDC-DUP1-190206	FD	2/6/2019	100 U	--	--	--
BDC-103	BDC-103-190206	N	2/6/2019	100 U	--	--	--
BDC-103	BDC-103-190502	N	5/2/2019	100 U	--	--	--
BDC-103	BDC-DUP2-190502	FD	5/2/2019	100 U	--	--	--

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Groundwater Petroleum Hydrocarbon Analytical Results
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				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-103-191105	N	11/5/2019	**1290**	--	--	--
BDC-103	BDC-DUP2-191105	FD	11/5/2019	**1300**	--	--	--
BDC-104	BDC-104-080218	N	2/18/2008	**2900**	--	--	--
BDC-104	BDC-104-080327	N	3/27/2008	**3200**	--	--	--
BDC-104	BDC-104-080515	N	5/15/2008	**1000**	--	--	--
BDC-104	BDC-104-080716	N	7/16/2008	**2300**	--	--	--
BDC-104	BDC-104-080915	N	9/15/2008	**640**	--	--	--
BDC-104	BDC-104-081120	N	11/20/2008	250 U	--	--	--
BDC-104	BDC-104-090116	N	1/16/2009	**260**	--	--	--
BDC-104	BDC-104-090211	N	2/11/2009	250 U	--	--	--
BDC-104	BDC-104-090309	N	3/9/2009	250 U	--	--	--
BDC-104	BDC-104-090416	N	4/16/2009	250 U	--	--	--
BDC-104	BDC-104-090514	N	5/14/2009	250 U	--	--	--
BDC-104	BDC-104-090717	N	7/17/2009	250 U	--	--	--
BDC-104	BDC-104-090909	N	9/9/2009	250 U	--	--	--
BDC-104	BDC-104-091112	N	11/12/2009	250 U	--	--	--
BDC-104	BDC-104-100217	N	2/17/2010	250 U	--	--	--
BDC-104	BDC-104-100517	N	5/17/2010	250 U	--	--	--
BDC-104	BDC-104-100816	N	8/16/2010	250 U	--	--	--
BDC-104	BDC-104-101108	N	11/8/2010	250 U	--	--	--
BDC-104	BDC-104-110216	N	2/16/2011	250 U	--	--	--
BDC-104	BDC-104-110503	N	5/3/2011	250 U	--	--	--
BDC-104	BDC-104-110801	N	8/1/2011	250 U	--	--	--
BDC-104	BDC-104-111101	N	11/1/2011	250 U	--	--	--
BDC-104	BDC-104-120219	N	2/19/2012	250 U	--	--	--
BDC-104	BDC-104-120503	N	5/3/2012	250 U	--	--	--
BDC-104	BDC-104-120904	N	9/4/2012	250 U	--	--	--
BDC-104	BDC-104-121113	N	11/13/2012	250 U	--	--	--
BDC-104	BDC-104-130220	N	2/20/2013	**280**	--	--	--
BDC-104	BDC-104-130520	N	5/20/2013	250 U	--	--	--
BDC-104	BDC-104-130828	N	8/28/2013	250 U	--	--	--
BDC-104	BDC-104-131119	N	11/19/2013	250 U	--	--	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
BDC-104	BDC-104-140211	N	2/11/2014	250 U	--	--	--
BDC-104	BDC-104-140506	N	5/6/2014	250 U	--	--	--
BDC-104	BDC-104-140807	N	8/7/2014	250 U	--	--	--
BDC-104	BDC-104-141104	N	11/4/2014	250 U	--	--	--
BDC-104	BDC-104-150121	N	1/21/2015	250 U	--	--	--
BDC-104	BDC-104-150428	N	4/28/2015	250 U	--	--	--
BDC-104	BDC-104-150720	N	7/20/2015	250 U	--	--	--
BDC-104	BDC-104-151026	N	10/26/2015	250 U	--	--	--
BDC-104	BDC-104-160127	N	1/27/2016	250 U	--	--	--
BDC-104	BDC-104-160413	N	4/13/2016	250 U	--	--	--
BDC-104	BDC-104-160809	N	8/9/2016	250 U	--	--	--
BDC-104	BDC-104-161101	N	11/1/2016	250 U	--	--	--
BDC-104	BDC-104-170207	N	2/7/2017	250 U	--	--	--
BDC-104	BDC-104-170503	N	5/3/2017	250 U	--	--	--
BDC-104	BDC-104-170801	N	8/1/2017	250 U	--	--	--
BDC-104	BDC-104-171107	N	11/7/2017	250 U	--	--	--
BDC-104	BDC-104-180205	N	2/5/2018	100 U	--	--	--
BDC-104	BDC-104-180501	N	5/1/2018	100 U	--	--	--
BDC-104	BDC-104-180806	N	8/6/2018	100 U	--	--	--
BDC-104	BDC-104-181105	N	11/5/2018	100 U	--	--	--
BDC-104	BDC-104-190206	N	2/6/2019	100 U	--	--	--
BDC-104	BDC-104-190502	N	5/2/2019	100 U	--	--	--
BDC-104	BDC-104-191105	N	11/5/2019	100 U	--	--	--
GS1-15	GS1-15-020506	N	5/6/2002	250 U	--	--	--
GS2-15	GS2-15-020507	N	5/7/2002	250 U	--	--	--
GS3-15	GS3-15-020507	N	5/7/2002	250 U	--	--	--
ORC10-15	ORC10-15-020507	N	5/7/2002	**230000**	--	--	--
ORC11-15	ORC11-15-020506	N	5/6/2002	**10000**	--	--	--
ORC1-15	ORC1-15-020506	N	5/6/2002	250 U	--	--	--
ORC12-15	ORC12-15-020507	N	5/7/2002	**45000**	--	--	--
ORC13-15	ORC13-15-020507	N	5/7/2002	250 U	--	--	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
ORC2-15	ORC2-15-020506	N	5/6/2002	**270**	--	--	--
ORC3-15	ORC3-15-020507	N	5/7/2002	250 U	--	--	--
ORC4-15	ORC4-15-020506	N	5/6/2002	**1100**	--	--	--
ORC5-15	ORC5-15-020506	N	5/6/2002	250 U	--	--	--
ORC6-15	ORC6-15-020507	N	5/7/2002	**65000**	--	--	--
ORC7-15	ORC7-15-020506	N	5/6/2002	**220000**	--	--	--
ORC8-15	ORC8-15-020506	N	5/6/2002	250 U	--	--	--
ORC9-15	ORC9-15-020507	N	5/7/2002	**7600**	--	--	--
SB-07	SB-07 LOWER-010123	N	1/23/2001	250 U	--	--	--
SB-07	SB-07 UPPER-010123	N	1/23/2001	250 U	--	--	--
SB-08	SB-08 LOWER-010123	N	1/23/2001	250 U	--	--	--
SB-08	SB-08 UPPER-010123	N	1/23/2001	250 U	--	--	--
SB-09	SB-09 LOWER-010124	N	1/24/2001	250 U	--	--	--
SB-09	SB-09 UPPER-010124	N	1/24/2001	**5300**	--	--	--
SB-10	SB-10 LOWER-010124	N	1/24/2001	**300**	--	--	--
SB-10	SB-10 UPPER-010124	N	1/24/2001	**250000**	--	--	--
SB-11	SB-11 LOWER-010124	N	1/24/2001	250 U	--	--	--
SB-11	SB-11 UPPER-010124	N	1/24/2001	250 U	--	--	--
SB-12	SB-12 LOWER-010124	N	1/24/2001	250 U	--	--	--
SB-12	SB-12 UPPER-010124	N	1/24/2001	250 U	--	--	--
Museum of Flight							
MW-2	MW-2-970519	N	5/19/1997	250 U	250 U	--	1000 U
MW-2	MW-2-980608	N	6/8/1998	--	250 U	500 U	--
MW-5	MW-5-951101	N	11/1/1995	250 U	250 U	1000 U	--
MW-5	MW-5-970519	N	5/19/1997	250 U	250 U	1000 U	--
MW-5	MW-5-980608	N	6/8/1998	--	0.25 U	**500**	--
MW-5	MW-5-991121	N	11/21/1999	250 U	250 U	--	--
MW-7	DC-MOF-MW7-010612	N	6/12/2001	250 U	250 U	500 U	--
MW-8	DC-MOF-MW8-010612	N	6/12/2001	250 U	**600**	500 U	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
B-1	B-1	N	1/4/2001	--	250 U	500 U	--
B-2	B-2	N	1/4/2001	--	250 U	500 U	--
B-3	B-3	N	1/4/2001	--	250 U	500 U	--
B-4	B-4	N	1/4/2001	--	--	--	--
B-5	B-5	N	1/4/2001	--	--	--	--
B-6	B-6	N	1/4/2001	--	250 U	500 U	--
B-7	B-7	N	1/4/2001	--	250 U	500 U	--
B-8	B-8	N	1/4/2001	--	--	--	--
B-9	B-9	N	1/4/2001	--	--	--	--
B-10	B-10	N	1/4/2001	--	**6900**	500 U	--
SWMU-17							
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	--	1000 U	--
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	250 U	250 U	1000 U	1000 U
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	250 U	250 U	--	--
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	--	250 U	500 U	--
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	--	1000 U	--
BDC-05-03	BDC-05-03-991122	N	11/22/1999	250 U	250 U	--	--
BDC-05-03	BDC-05-03-000531	N	5/31/2000	--	250 U	500 U	--
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	--	1000 U	--
BDC-05-04	BDC-05-04-970519	N	5/19/1997	250 U	250 U	1000 U	--
BDC-05-04	BDC-05-04-991122	N	11/22/1999	250 U	250 U	--	--
BDC-05-04	BDC-05-04-000531	N	5/31/2000	--	250 U	500 U	--
BDC-05-04	BDC-05-04-060515	N	5/15/2006	250 U	--	--	--
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	--	1000 U	--
BDC-05-05	BDC-05-05-970519	N	5/19/1997	250 U	250 U	1000 U	--
BDC-05-05	BDC-05-05-991122	N	11/22/1999	250 U	250 U	--	--
BDC-05-05	BDC-05-05-000531	N	5/31/2000	--	250 U	500 U	--
BDC-05-05	BDC-05-05-031119	N	11/19/2003	250 U	--	--	--
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	--	1000 U	--
BDC-05-07	BDC-05-07-970519	N	5/19/1997	250 U	250 U	1000 U	--
BDC-05-07	BDC-05-07-991122	N	11/22/1999	250 U	250 U	--	--
BDC-05-07	BDC-05-07-000531	N	5/31/2000	--	250 U	500 U	--

Table D-7
Groundwater Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement			
				Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Total Petroleum Hydrocarbons
				N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L
SWMU-20							
BDC-MW-6A	6A1-890801	N	8/1/1989	--	--	--	10000 U
BDC-MW-17A	MW-17A-060515	N	5/15/2006	250 U	--	--	--
BDC-MW-18A	MW-18A-060515	N	5/15/2006	250 U	--	--	--
BDC-MW-7A	7A1-890801	N	8/1/1989	--	--	--	10000 U
BDC-MW-8A	8A1-890801	N	8/1/1989	--	--	--	10000 U
BDC-MW-9A	9A1-890801	N	8/1/1989	--	--	--	10000 U
BDC-MW-9A	9A1A-890801	N	8/1/1989	--	--	--	10000 U
TS-1	TS-1-890801	N	8/1/1989	--	--	--	10000 U
TS-2	TS-2-890801	N	8/1/1989	--	--	--	10000 U
TS-3	TS-3-890801	N	8/1/1989	--	--	--	10000 U

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Bold text indicates detected analyte

Abbreviations/Acronyms:

-- = not analyzed
µg/L = micrograms per liter
FD = field duplicate
ID = Identification
N = primary sample
N/A = not applicable

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
AOC-01/02																																
DC952W2	DC952-W2	N	10/30/1990	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-1	9-52 MW1-010611	N	6/11/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-1	DC952-MW1-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-2	9-52 MW2-010611	N	6/11/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-2	DC952-MW2-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-3	9-52 MW3-010611	N	6/11/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-3	DC952-MW3-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-951101	N	11/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-970515	N	5/15/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-980609	N	6/9/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-991121	N	11/21/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-001206	N	12/6/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-010611	N	6/11/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-020604	N	6/4/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-951101	N	11/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-970515	N	5/15/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-980609	N	6/9/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-001206	N	12/6/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-010611	N	6/11/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-020604	N	6/4/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-951101	N	11/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-970515	N	5/15/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-980609	N	6/9/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-991121	N	11/21/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-001206	N	12/6/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-010611	N	6/11/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-020604	N	6/4/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
AOC-01/02																											
DC952W2	DC952-W2	N	10/30/1990	--	--	--	--	--	--	**490**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-1	9-52 MW1-010611	N	6/11/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-1	DC952-MW1-011203	N	12/3/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-2	9-52 MW2-010611	N	6/11/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-2	DC952-MW2-011203	N	12/3/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-3	9-52 MW3-010611	N	6/11/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9-52 MW-3	DC952-MW3-011203	N	12/3/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-951101	N	11/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-970515	N	5/15/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-980609	N	6/9/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-991121	N	11/21/1999	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-001206	N	12/6/2000	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-010611	N	6/11/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-011203	N	12/3/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-020604	N	6/4/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-951101	N	11/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-970515	N	5/15/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-980609	N	6/9/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-001206	N	12/6/2000	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-010611	N	6/11/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-011203	N	12/3/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-020604	N	6/4/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-951101	N	11/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-970515	N	5/15/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-980609	N	6/9/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-991121	N	11/21/1999	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-001206	N	12/6/2000	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-010611	N	6/11/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-011203	N	12/3/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-020604	N	6/4/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
AOC-01/02																														
DC952W2	DC952-W2	N	10/30/1990	--	**96**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**450**	**840**	--	--	--	--	--	--	--	--	--
9-52 MW-1	9-52 MW1-010611	N	6/11/2001	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.17**	**1.47**	--	--	--	--	--	--	--	--	--
9-52 MW-1	DC952-MW1-011203	N	12/3/2001	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--
9-52 MW-2	9-52 MW2-010611	N	6/11/2001	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--
9-52 MW-2	DC952-MW2-011203	N	12/3/2001	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--
9-52 MW-3	9-52 MW3-010611	N	6/11/2001	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--
9-52 MW-3	DC952-MW3-011203	N	12/3/2001	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	**1.1**	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-951101	N	11/1/1995	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	10 U	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-970515	N	5/15/1997	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-980609	N	6/9/1998	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-991121	N	11/21/1999	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-001206	N	12/6/2000	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-010611	N	6/11/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.17 J**	**1.47 J**	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-011203	N	12/3/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-1	DC-9-52-1-020604	N	6/4/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-951101	N	11/1/1995	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	10 U	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-970515	N	5/15/1997	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-980609	N	6/9/1998	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-991121	N	11/21/1999	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-001206	N	12/6/2000	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-010611	N	6/11/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-011203	N	12/3/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-2	DC-9-52-2-020604	N	6/4/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-951101	N	11/1/1995	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	10 U	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-970515	N	5/15/1997	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-980609	N	6/9/1998	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-991121	N	11/21/1999	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-001206	N	12/6/2000	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-010611	N	6/11/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-011203	N	12/3/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	**1.1**	--	--	--	--	--	--	--	--	--
DC-9-52-3	DC-9-52-3-020604	N	6/4/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
AOC-03/04																																
BDC-MW-21A	MW-21A-921022	N	10/22/1992	--	1 U	1 U	1 U	2 U	1 U	1 U	--	--	--	--	--	--	--	--	--	1 U	--	1 U	--	--	--	--	--	5 U	1 U	--	--	5 U
BDC-MW-21A	MW-21A-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-21A	MW-21A-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-000601	N	6/1/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-21A	MW-21A-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-21C	MW-21C-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21C	MW-21C-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21C	MW-21C-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-21C	MW-21C-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
AOC-05																																
BDC-101	BDC-101-010611	N	6/11/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-010904	N	9/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020313	N	3/13/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020429	N	4/29/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020603	N	6/3/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020701	N	7/1/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020801	N	8/1/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-021202	N	12/2/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-030310	N	3/10/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-030603	N	6/3/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
AOC-03/04																											
BDC-MW-21A	MW-21A-921022	N	10/22/1992	--	--	5 U	5 U	--	--	1 U	--	--	1 U	--	1 U	2 U	1 U	1 U	1 U	2 U	1 U	2 U	1 U	1 U	--	1 U	--
BDC-MW-21A	MW-21A-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-21A	MW-21A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-21A	MW-21A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-21A	MW-21A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-21A	MW-21A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-21A	MW-21A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-21A	MW-21A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-21A	MW-21A-981020	N	10/20/1998	1 U	1 U	1 U	**3.5**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-000601	N	6/1/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-011205	N	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21C	MW-21C-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.24 J**	1 U	--	1 U	1 U
BDC-MW-21C	MW-21C-011205	N	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21C	MW-21C-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21C	MW-21C-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
AOC-05																											
BDC-101	BDC-101-010611	N	6/11/2001	--	--	--	--	--	--	**11.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-010904	N	9/4/2001	--	--	--	--	--	--	**7.13 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-011203	N	12/3/2001	--	--	--	--	--	--	**95**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020313	N	3/13/2002	--	--	--	--	--	--	**1.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020429	N	4/29/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020603	N	6/3/2002	--	--	--	--	--	--	**1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020701	N	7/1/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020801	N	8/1/2002	--	--	--	--	--	--	**3.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-021202	N	12/2/2002	--	--	--	--	--	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-030310	N	3/10/2003	--	--	--	--	--	--	**1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-030603	N	6/3/2003	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
AOC-03/04																														
BDC-MW-21A	MW-21A-921022	N	10/22/1992	--	1 U	--	--	--	--	--	2 U	--	--	--	--	--	1 U	--	1 U	1 U	2 U	1 U	1 U	--	1 U	2 U	--	--	1 U	2 U
BDC-MW-21A	MW-21A-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-21A	MW-21A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-21A	MW-21A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-21A	MW-21A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-21A	MW-21A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-21A	MW-21A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-21A	MW-21A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-21A	MW-21A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-21A	MW-21A-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-21A	MW-21A-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-21A	MW-21A-000601	N	6/1/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-21A	MW-21A-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-21A	MW-21A-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-21A	MW-21A-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-21A	MW-21A-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-21A	MW-21A-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-21C	MW-21C-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-21C	MW-21C-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-21C	MW-21C-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-21C	MW-21C-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
AOC-05																														
BDC-101	BDC-101-010611	N	6/11/2001	--	**113.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	**109.2**	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-010904	N	9/4/2001	--	**50.42**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10.66**	**53.8**	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-011203	N	12/3/2001	--	**750**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	**650**	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020313	N	3/13/2002	--	**4.4**	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020429	N	4/29/2002	--	**2.2**	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020603	N	6/3/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020701	N	7/1/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-020801	N	8/1/2002	--	**2.4**	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-021202	N	12/2/2002	--	**21**	--	--	--	**27**	--	--	--	--	--	**6.4**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-030310	N	3/10/2003	--	**4.5**	--	--	--	**3.2**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-030603	N	6/3/2003	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-101	BDC-101-031119	N	11/19/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-040428	N	4/28/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-041018	N	10/18/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-050510	N	5/10/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-051110	N	11/10/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-061120	N	11/20/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070220	N	2/20/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070319	N	3/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070424	N	4/24/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070517	N	5/17/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-071126	N	11/26/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080218	N	2/18/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080327	N	3/27/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080515	N	5/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080716	N	7/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080915	N	9/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-081120	N	11/20/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090514	N	5/14/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090717	N	7/17/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090909	N	9/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-091112	N	11/12/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100217	N	2/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100517	N	5/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100816	N	8/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-101108	N	11/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110216	N	2/16/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110503	N	5/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110801	N	8/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-120503	N	5/3/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-101	BDC-101-031119	N	11/19/2003	--	--	--	--	--	--	**13 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-040428	N	4/28/2004	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-041018	N	10/18/2004	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-050510	N	5/10/2005	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-051110	N	11/10/2005	--	--	--	--	--	--	**7.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-060515	N	5/15/2006	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-061120	N	11/20/2006	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070220	N	2/20/2007	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070319	N	3/19/2007	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070424	N	4/24/2007	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070517	N	5/17/2007	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-071126	N	11/26/2007	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080218	N	2/18/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080327	N	3/27/2008	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080515	N	5/15/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080716	N	7/16/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080915	N	9/15/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-081120	N	11/20/2008	--	--	--	--	--	--	**1.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090116	N	1/16/2009	--	--	--	--	--	--	**1.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090211	N	2/11/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090309	N	3/9/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090416	N	4/16/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090514	N	5/14/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090717	N	7/17/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090909	N	9/9/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-091112	N	11/12/2009	--	--	--	--	--	--	**1.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100217	N	2/17/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100517	N	5/17/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100816	N	8/16/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-101108	N	11/8/2010	--	--	--	--	--	--	**2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110216	N	2/16/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110503	N	5/3/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110801	N	8/1/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-111101	N	11/1/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-120219	N	2/19/2012	--	--	--	--	--	--	**2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-120503	N	5/3/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-101	BDC-101-031119	N	11/19/2003	--	**15 J**	--	--	--	**35 J**	--	--	--	--	--	1 UJ	--	--	--	--	1 UJ	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-040428	N	4/28/2004	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-041018	N	10/18/2004	--	**15**	--	--	--	**43**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-050510	N	5/10/2005	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-051110	N	11/10/2005	--	**2.6**	--	--	--	**42**	--	--	--	--	--	1 U	--	--	--	--	1 U	**42**	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-060515	N	5/15/2006	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-061120	N	11/20/2006	--	**15**	--	--	--	**72**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070220	N	2/20/2007	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070319	N	3/19/2007	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070424	N	4/24/2007	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-070517	N	5/17/2007	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-071126	N	11/26/2007	--	**2.1**	--	--	--	**6.5**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080218	N	2/18/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080327	N	3/27/2008	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080515	N	5/15/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080716	N	7/16/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-080915	N	9/15/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-081120	N	11/20/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090116	N	1/16/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090211	N	2/11/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090309	N	3/9/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090416	N	4/16/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090514	N	5/14/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090717	N	7/17/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-090909	N	9/9/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-091112	N	11/12/2009	--	**6.6**	--	--	--	**16**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100217	N	2/17/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100517	N	5/17/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-100816	N	8/16/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-101108	N	11/8/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110216	N	2/16/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110503	N	5/3/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-110801	N	8/1/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-111101	N	11/1/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-120219	N	2/19/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-120503	N	5/3/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-101	BDC-101-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-121113	N	11/13/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130520	N	5/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-131119	N	11/19/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140506	N	5/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140807	N	8/7/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-141104	N	11/4/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150428	N	4/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-151026	N	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160127	N	1/27/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160413	N	4/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180205	N	2/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180806	N	8/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-181105	N	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-190206	N	2/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-010613	N	6/13/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-010904	N	9/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020313	N	3/13/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020429	N	4/29/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020603	N	6/3/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020701	N	7/1/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-101	BDC-101-120904	N	9/4/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-121113	N	11/13/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130220	N	2/20/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130520	N	5/20/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130828	N	8/28/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-131119	N	11/19/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140211	N	2/11/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140506	N	5/6/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140807	N	8/7/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-141104	N	11/4/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150121	N	1/21/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150428	N	4/28/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150720	N	7/20/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-151026	N	10/26/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160127	N	1/27/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160413	N	4/13/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160809	N	8/9/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-161101	N	11/1/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170207	N	2/7/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170503	N	5/3/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170801	N	8/1/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-171107	N	11/7/2017	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180205	N	2/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180501	N	5/1/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180806	N	8/6/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-181105	N	11/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-190206	N	2/6/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-190502	N	5/2/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-191105	N	11/5/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-010613	N	6/13/2001	--	--	--	--	--	--	**5.33 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-010904	N	9/4/2001	--	--	--	--	--	--	**1.61 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-011203	N	12/3/2001	--	--	--	--	--	--	**3.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020313	N	3/13/2002	--	--	--	--	--	--	**1.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020429	N	4/29/2002	--	--	--	--	--	--	**2.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020603	N	6/3/2002	--	--	--	--	--	--	**4.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020701	N	7/1/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-101	BDC-101-120904	N	9/4/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-121113	N	11/13/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130220	N	2/20/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130520	N	5/20/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-130828	N	8/28/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-131119	N	11/19/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140211	N	2/11/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140506	N	5/6/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-140807	N	8/7/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-141104	N	11/4/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150121	N	1/21/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150428	N	4/28/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-150720	N	7/20/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-151026	N	10/26/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160127	N	1/27/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160413	N	4/13/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-160809	N	8/9/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-161101	N	11/1/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170207	N	2/7/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170503	N	5/3/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-170801	N	8/1/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-171107	N	11/7/2017	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180205	N	2/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180501	N	5/1/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-180806	N	8/6/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-181105	N	11/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-190206	N	2/6/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-190502	N	5/2/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-101	BDC-101-191105	N	11/5/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-010613	N	6/13/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	**1.87 J**	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-010904	N	9/4/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.89 J**	**3.49 J**	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-011203	N	12/3/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020313	N	3/13/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020429	N	4/29/2002	--	1 U	--	--	--	**1.1**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020603	N	6/3/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-020701	N	7/1/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-102	BDC-102-020801	N	8/1/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-021202	N	12/2/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-030310	N	3/10/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-030603	N	6/3/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-031119	N	11/19/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-040428	N	4/28/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-041018	N	10/18/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-050510	N	5/10/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-051110	N	11/10/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-061120	N	11/20/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070220	N	2/20/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070319	N	3/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070424	N	4/24/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070517	N	5/17/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-071126	N	11/26/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080218	N	2/18/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080327	N	3/27/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080515	N	5/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080716	N	7/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080915	N	9/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-081120	N	11/20/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090514	N	5/14/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090717	N	7/17/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090909	N	9/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-091112	N	11/12/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100217	N	2/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100517	N	5/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100816	N	8/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-101108	N	11/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-110216	N	2/16/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-110503	N	5/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-102	BDC-102-020801	N	8/1/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-021202	N	12/2/2002	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-030310	N	3/10/2003	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-030603	N	6/3/2003	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-031119	N	11/19/2003	--	--	--	--	--	--	**120 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-040428	N	4/28/2004	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-041018	N	10/18/2004	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-050510	N	5/10/2005	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-051110	N	11/10/2005	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-060515	N	5/15/2006	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-061120	N	11/20/2006	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070220	N	2/20/2007	--	--	--	--	--	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070319	N	3/19/2007	--	--	--	--	--	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070424	N	4/24/2007	--	--	--	--	--	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070517	N	5/17/2007	--	--	--	--	--	--	**1.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-071126	N	11/26/2007	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080218	N	2/18/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080327	N	3/27/2008	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080515	N	5/15/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080716	N	7/16/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080915	N	9/15/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-081120	N	11/20/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090116	N	1/16/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090211	N	2/11/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090309	N	3/9/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090416	N	4/16/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090514	N	5/14/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090717	N	7/17/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090909	N	9/9/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-091112	N	11/12/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100217	N	2/17/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100517	N	5/17/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100816	N	8/16/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-101108	N	11/8/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-110216	N	2/16/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-110503	N	5/3/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-102	BDC-102-020801	N	8/1/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-021202	N	12/2/2002	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-030310	N	3/10/2003	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-030603	N	6/3/2003	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-031119	N	11/19/2003	--	**8.5 J**	--	--	--	1 UJ	--	--	--	--	--	1 UJ	--	--	--	--	1 UJ	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-040428	N	4/28/2004	--	1 U	--	--	--	**3**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-041018	N	10/18/2004	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-050510	N	5/10/2005	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-051110	N	11/10/2005	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-060515	N	5/15/2006	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-061120	N	11/20/2006	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070220	N	2/20/2007	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070319	N	3/19/2007	--	1 U	--	--	--	**32**	--	--	--	--	--	1 U	--	--	--	--	1 U	**32**	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070424	N	4/24/2007	--	**3.1**	--	--	--	**100**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-070517	N	5/17/2007	--	1 U	--	--	--	**7.4**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-071126	N	11/26/2007	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080218	N	2/18/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080327	N	3/27/2008	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080515	N	5/15/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080716	N	7/16/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-080915	N	9/15/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-081120	N	11/20/2008	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090116	N	1/16/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090211	N	2/11/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090309	N	3/9/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090416	N	4/16/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090514	N	5/14/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090717	N	7/17/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-090909	N	9/9/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-091112	N	11/12/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100217	N	2/17/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100517	N	5/17/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-100816	N	8/16/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-101108	N	11/8/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-110216	N	2/16/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-110503	N	5/3/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-102	BDC-102-110801	N	8/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120503	N	5/3/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-121113	N	11/13/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130520	N	5/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-131119	N	11/19/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140506	N	5/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140807	N	8/7/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-141104	N	11/4/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150428	N	4/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-151026	N	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160127	N	1/27/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160413	N	4/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180205	N	2/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180806	N	8/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-181105	N	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-190206	N	2/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-010614	N	6/14/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-010904	N	9/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-011203	N	12/3/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-102	BDC-102-110801	N	8/1/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-111101	N	11/1/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120219	N	2/19/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120503	N	5/3/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120904	N	9/4/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-121113	N	11/13/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130220	N	2/20/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130520	N	5/20/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130828	N	8/28/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-131119	N	11/19/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140211	N	2/11/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140506	N	5/6/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140807	N	8/7/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-141104	N	11/4/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150121	N	1/21/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150428	N	4/28/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150720	N	7/20/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-151026	N	10/26/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160127	N	1/27/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160413	N	4/13/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160809	N	8/9/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-161101	N	11/1/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170207	N	2/7/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170503	N	5/3/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170801	N	8/1/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-171107	N	11/7/2017	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180205	N	2/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180501	N	5/1/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180806	N	8/6/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-181105	N	11/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-190206	N	2/6/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-190502	N	5/2/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-191105	N	11/5/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-010614	N	6/14/2001	--	--	--	--	--	--	**875 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-010904	N	9/4/2001	--	--	--	--	--	--	**494 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-011203	N	12/3/2001	--	--	--	--	--	--	**5100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-102	BDC-102-110801	N	8/1/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-111101	N	11/1/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120219	N	2/19/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120503	N	5/3/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-120904	N	9/4/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-121113	N	11/13/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130220	N	2/20/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130520	N	5/20/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-130828	N	8/28/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-131119	N	11/19/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140211	N	2/11/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140506	N	5/6/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-140807	N	8/7/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-141104	N	11/4/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150121	N	1/21/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150428	N	4/28/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-150720	N	7/20/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-151026	N	10/26/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160127	N	1/27/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160413	N	4/13/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-160809	N	8/9/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-161101	N	11/1/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170207	N	2/7/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170503	N	5/3/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-170801	N	8/1/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-171107	N	11/7/2017	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180205	N	2/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180501	N	5/1/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-180806	N	8/6/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-181105	N	11/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-190206	N	2/6/2019	--	**0.98**	--	--	--	**12.5**	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	**12.6**	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-190502	N	5/2/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-102	BDC-102-191105	N	11/5/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-010614	N	6/14/2001	--	**1985 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12010**	**11430**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-010904	N	9/4/2001	--	**419 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3760**	**2636**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-011203	N	12/3/2001	--	**10000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2300000**	**3400000**	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-103-020313	N	3/13/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020429	N	4/29/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020603	N	6/3/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020701	N	7/1/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020801	N	8/1/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-021202	N	12/2/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-030310	N	3/10/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-030603	N	6/3/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-031119	N	11/19/2003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-040428	N	4/28/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-041018	N	10/18/2004	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-050510	N	5/10/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-051110	N	11/10/2005	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-060515	FD	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-061120	N	11/20/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070220	N	2/20/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070319	N	3/19/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070424	N	4/24/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070517	N	5/17/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-071126	N	11/26/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080218	N	2/18/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080327	N	3/27/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080515	N	5/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080716	N	7/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080915	N	9/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-081120	N	11/20/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090514	N	5/14/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090717	N	7/17/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090909	N	9/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-091112	N	11/12/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-100217	N	2/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-103	BDC-103-020313	N	3/13/2002	--	--	--	--	--	--	**1700**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020429	N	4/29/2002	--	--	--	--	--	--	**980**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020603	N	6/3/2002	--	--	--	--	--	--	**960**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020701	N	7/1/2002	--	--	--	--	--	--	**1300**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020801	N	8/1/2002	--	--	--	--	--	--	**4600**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-021202	N	12/2/2002	--	--	--	--	--	--	**1400**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-030310	N	3/10/2003	--	--	--	--	--	--	**780**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-030603	N	6/3/2003	--	--	--	--	--	--	**900**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-031119	N	11/19/2003	--	--	--	--	--	--	**850 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-040428	N	4/28/2004	--	--	--	--	--	--	**1600**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-041018	N	10/18/2004	--	--	--	--	--	--	**2100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-050510	N	5/10/2005	--	--	--	--	--	--	**2200**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-051110	N	11/10/2005	--	--	--	--	--	--	**2200**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-060515	N	5/15/2006	--	--	--	--	--	--	**1600**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-060515	FD	5/15/2006	--	--	--	--	--	--	**1600**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-061120	N	11/20/2006	--	--	--	--	--	--	**2000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070220	N	2/20/2007	--	--	--	--	--	--	**460**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070319	N	3/19/2007	--	--	--	--	--	--	**490**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070424	N	4/24/2007	--	--	--	--	--	--	**820**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070517	N	5/17/2007	--	--	--	--	--	--	**1400**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-071126	N	11/26/2007	--	--	--	--	--	--	**3300**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080218	N	2/18/2008	--	--	--	--	--	--	**1100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080327	N	3/27/2008	--	--	--	--	--	--	**1500**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080515	N	5/15/2008	--	--	--	--	--	--	**2700**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080716	N	7/16/2008	--	--	--	--	--	--	**1800**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080915	N	9/15/2008	--	--	--	--	--	--	**2300**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-081120	N	11/20/2008	--	--	--	--	--	--	**1200**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090116	N	1/16/2009	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090211	N	2/11/2009	--	--	--	--	--	--	**820**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090309	N	3/9/2009	--	--	--	--	--	--	**1100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090416	N	4/16/2009	--	--	--	--	--	--	**710**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090514	N	5/14/2009	--	--	--	--	--	--	**680**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090717	N	7/17/2009	--	--	--	--	--	--	**410**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090909	N	9/9/2009	--	--	--	--	--	--	**620**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-091112	N	11/12/2009	--	--	--	--	--	--	**340**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-100217	N	2/17/2010	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-103-020313	N	3/13/2002	--	**4900**	--	--	--	**20000**	--	--	--	--	--	**6400**	--	--	--	--	**17000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020429	N	4/29/2002	--	**5400**	--	--	--	**20000**	--	--	--	--	--	**7000**	--	--	--	--	**16000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020603	N	6/3/2002	--	**5100**	--	--	--	**20000**	--	--	--	--	--	**7100**	--	--	--	--	**17000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020701	N	7/1/2002	--	**5200**	--	--	--	**20000**	--	--	--	--	--	**6800**	--	--	--	--	**16000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-020801	N	8/1/2002	--	**5200**	--	--	--	**19000**	--	--	--	--	--	**6600**	--	--	--	--	**18000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-021202	N	12/2/2002	--	**5000**	--	--	--	**22000**	--	--	--	--	--	**6900**	--	--	--	--	**15000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-030310	N	3/10/2003	--	**5200**	--	--	--	**20000**	--	--	--	--	--	**6700**	--	--	--	--	**13000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-030603	N	6/3/2003	--	**5000**	--	--	--	**20000**	--	--	--	--	--	**6600**	--	--	--	--	**10000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-031119	N	11/19/2003	--	**4500 J**	--	--	--	**18000 J**	--	--	--	--	--	**5500 J**	--	--	--	--	**8300 J**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-040428	N	4/28/2004	--	**3900**	--	--	--	**16000**	--	--	--	--	--	**5100**	--	--	--	--	**6600**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-041018	N	10/18/2004	--	**3700**	--	--	--	**15000**	--	--	--	--	--	**4400**	--	--	--	--	**5500**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-050510	N	5/10/2005	--	**3800**	--	--	--	**14000**	--	--	--	--	--	**3200**	--	--	--	--	**5500**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-051110	N	11/10/2005	--	**3700**	--	--	--	**12000**	--	--	--	--	--	**2500**	--	--	--	--	**3500**	**15000**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-060515	N	5/15/2006	--	**3100**	--	--	--	**10000**	--	--	--	--	--	**2200**	--	--	--	--	**3800**	**12000**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-060515	FD	5/15/2006	--	**3100**	--	--	--	**10000**	--	--	--	--	--	**2200**	--	--	--	--	**3800**	**12000**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-061120	N	11/20/2006	--	**2200**	--	--	--	**3900**	--	--	--	--	--	**1000**	--	--	--	--	**730**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070220	N	2/20/2007	--	**140**	--	--	--	**3600**	--	--	--	--	--	**1600**	--	--	--	--	**420**	**5200**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070319	N	3/19/2007	--	**130**	--	--	--	**3500**	--	--	--	--	--	**1700**	--	--	--	--	**88**	**5200**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070424	N	4/24/2007	--	**220**	--	--	--	**3500**	--	--	--	--	--	**1800**	--	--	--	--	**440**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-070517	N	5/17/2007	--	**1100**	--	--	--	**8300**	--	--	--	--	--	**3200**	--	--	--	--	**4300**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-071126	N	11/26/2007	--	**4000**	--	--	--	**11000**	--	--	--	--	--	**4900**	--	--	--	--	**21000**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080218	N	2/18/2008	--	**700**	--	--	--	**7500**	--	--	--	--	--	**1900**	--	--	--	--	**2600**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080327	N	3/27/2008	--	**1100**	--	--	--	**9700**	--	--	--	--	--	**3000**	--	--	--	--	**1900**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080515	N	5/15/2008	--	**1400**	--	--	--	**11000**	--	--	--	--	--	**3600**	--	--	--	--	**4400**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080716	N	7/16/2008	--	**490**	--	--	--	**10000**	--	--	--	--	--	**3100**	--	--	--	--	**440**	**13100**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-080915	N	9/15/2008	--	**1500**	--	--	--	**10000**	--	--	--	--	--	**3600**	--	--	--	--	**7600**	**13600**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-081120	N	11/20/2008	--	**110**	--	--	--	**7000**	--	--	--	--	--	**2100**	--	--	--	--	**260**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090116	N	1/16/2009	--	**12**	--	--	--	**1000**	--	--	--	--	--	**480**	--	--	--	--	**220**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090211	N	2/11/2009	--	100 U	--	--	--	**2900**	--	--	--	--	--	**1500**	--	--	--	--	**510**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090309	N	3/9/2009	--	**18 J**	--	--	--	**2400**	--	--	--	--	--	**1200**	--	--	--	--	**440**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090416	N	4/16/2009	--	50 U	--	--	--	**2700**	--	--	--	--	--	**1200**	--	--	--	--	**310**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090514	N	5/14/2009	--	**20**	--	--	--	**2400**	--	--	--	--	--	**1500**	--	--	--	--	**320**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090717	N	7/17/2009	--	**32**	--	--	--	**630**	--	--	--	--	--	**1000**	--	--	--	--	**280**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-090909	N	9/9/2009	--	**83**	--	--	--	**700**	--	--	--	--	--	**1200**	--	--	--	--	**270**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-091112	N	11/12/2009	--	**27**	--	--	--	**1800**	--	--	--	--	--	**1200**	--	--	--	--	**140**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-100217	N	2/17/2010	--	1 U	--	--	--	**3.1**	--	--	--	--	--	**22**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-103-100517	N	5/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-100816	N	8/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-101108	N	11/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110216	N	2/16/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110503	N	5/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110801	N	8/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120503	N	5/3/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-121113	N	11/13/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130520	N	5/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-131119	N	11/19/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140506	N	5/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140807	N	8/7/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-141104	N	11/4/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150428	N	4/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-151026	N	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160127	N	1/27/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160413	N	4/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-160809	FD	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-161101	FD	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-170503	FD	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-170801	FD	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-171107	FD	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-103	BDC-103-100517	N	5/17/2010	--	--	--	--	--	--	**79**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-100816	N	8/16/2010	--	--	--	--	--	--	**740**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-101108	N	11/8/2010	--	--	--	--	--	--	**240**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110216	N	2/16/2011	--	--	--	--	--	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110503	N	5/3/2011	--	--	--	--	--	--	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110801	N	8/1/2011	--	--	--	--	--	--	**76**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-111101	N	11/1/2011	--	--	--	--	--	--	**1300**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120219	N	2/19/2012	--	--	--	--	--	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120503	N	5/3/2012	--	--	--	--	--	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120904	N	9/4/2012	--	--	--	--	--	--	**530**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-121113	N	11/13/2012	--	--	--	--	--	--	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130220	N	2/20/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130520	N	5/20/2013	--	--	--	--	--	--	**9.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130828	N	8/28/2013	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-131119	N	11/19/2013	--	--	--	--	--	--	**22**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140211	N	2/11/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140506	N	5/6/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140807	N	8/7/2014	--	--	--	--	--	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-141104	N	11/4/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150121	N	1/21/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150428	N	4/28/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150720	N	7/20/2015	--	--	--	--	--	--	**54**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-151026	N	10/26/2015	--	--	--	--	--	--	**480**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160127	N	1/27/2016	--	--	--	--	--	--	**3.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160413	N	4/13/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160809	N	8/9/2016	--	--	--	--	--	--	**56**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-160809	FD	8/9/2016	--	--	--	--	--	--	**58**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-161101	N	11/1/2016	--	--	--	--	--	--	**83**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-161101	FD	11/1/2016	--	--	--	--	--	--	**69**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170207	N	2/7/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170503	N	5/3/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-170503	FD	5/3/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170801	N	8/1/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-170801	FD	8/1/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-171107	N	11/7/2017	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-171107	FD	11/7/2017	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-103-100517	N	5/17/2010	--	**5.2**	--	--	--	**60**	--	--	--	--	--	**86**	--	--	--	--	**44**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-100816	N	8/16/2010	--	**110**	--	--	--	**420**	--	--	--	--	--	**320**	--	--	--	--	**380**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-101108	N	11/8/2010	--	**1.7**	--	--	--	**180**	--	--	--	--	--	**540**	--	--	--	--	**11**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110216	N	2/16/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	**5.4**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110503	N	5/3/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	**2.2**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-110801	N	8/1/2011	--	**1.8**	--	--	--	**7.8**	--	--	--	--	--	**2.5**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-111101	N	11/1/2011	--	**780**	--	--	--	**2300**	--	--	--	--	--	**1300**	--	--	--	--	**2200**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120219	N	2/19/2012	--	**19**	--	--	--	**260**	--	--	--	--	--	**69**	--	--	--	--	**31**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120503	N	5/3/2012	--	1 U	--	--	--	**3.6**	--	--	--	--	--	**14**	--	--	--	--	**1.4**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-120904	N	9/4/2012	--	**9.4**	--	--	--	**40**	--	--	--	--	--	**42**	--	--	--	--	**24**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-121113	N	11/13/2012	--	**3.7**	--	--	--	**210**	--	--	--	--	--	**380**	--	--	--	--	**9.5**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130220	N	2/20/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	**3.4**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130520	N	5/20/2013	--	1 U	--	--	--	**4.4**	--	--	--	--	--	**1.8**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-130828	N	8/28/2013	--	**47**	--	--	--	**260**	--	--	--	--	--	**91**	--	--	--	--	**56**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-131119	N	11/19/2013	--	**31**	--	--	--	**590**	--	--	--	--	--	**350**	--	--	--	--	**37**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140211	N	2/11/2014	--	1 U	--	--	--	**4.9**	--	--	--	--	--	**3.6**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140506	N	5/6/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-140807	N	8/7/2014	--	1 U	--	--	--	**2.4**	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-141104	N	11/4/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150121	N	1/21/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150428	N	4/28/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-150720	N	7/20/2015	--	**3.7**	--	--	--	**8.3**	--	--	--	--	--	**2.6**	--	--	--	--	**1**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-151026	N	10/26/2015	--	**600**	--	--	--	**1800**	--	--	--	--	--	**850**	--	--	--	--	**740**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160127	N	1/27/2016	--	**3.3**	--	--	--	**12**	--	--	--	--	--	**7**	--	--	--	--	**1.2**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160413	N	4/13/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	**2**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-160809	N	8/9/2016	--	**42**	--	--	--	**210**	--	--	--	--	--	**51**	--	--	--	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-160809	FD	8/9/2016	--	**43**	--	--	--	**210**	--	--	--	--	--	**52**	--	--	--	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-161101	N	11/1/2016	--	**120**	--	--	--	**360**	--	--	--	--	--	**180**	--	--	--	--	**24**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-DUP-161101	FD	11/1/2016	--	**98**	--	--	--	**310**	--	--	--	--	--	**140**	--	--	--	--	**19**	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170207	N	2/7/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	**2.1**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170503	N	5/3/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	**1.7**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-170503	FD	5/3/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-170801	N	8/1/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-170801	FD	8/1/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-171107	N	11/7/2017	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-171107	FD	11/7/2017	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-DUP1-180205	FD	2/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180205	N	2/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-180501	FD	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-180806	FD	8/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180806	N	8/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-181105	N	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-181105	FD	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-190206	FD	2/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-190206	N	2/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-190502	FD	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-191105	FD	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080218	N	2/18/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080327	N	3/27/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080515	N	5/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080716	N	7/16/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080915	N	9/15/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-081120	N	11/20/2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090116	N	1/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090211	N	2/11/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090309	N	3/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090416	N	4/16/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090514	N	5/14/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090717	N	7/17/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090909	N	9/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-091112	N	11/12/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100217	N	2/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100517	N	5/17/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100816	N	8/16/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-101108	N	11/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110216	N	2/16/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110503	N	5/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110801	N	8/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-103	BDC-DUP1-180205	FD	2/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180205	N	2/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-180501	FD	5/1/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180501	N	5/1/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-180806	FD	8/6/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180806	N	8/6/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-181105	N	11/5/2018	--	--	--	--	--	--	**1.82**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-181105	FD	11/5/2018	--	--	--	--	--	--	**1.81**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-190206	FD	2/6/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-190206	N	2/6/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-190502	FD	5/2/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-190502	N	5/2/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-191105	N	11/5/2019	--	--	--	--	--	--	**13.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-191105	FD	11/5/2019	--	--	--	--	--	--	**13.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080218	N	2/18/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080327	N	3/27/2008	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080515	N	5/15/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080716	N	7/16/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080915	N	9/15/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-081120	N	11/20/2008	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090116	N	1/16/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090211	N	2/11/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090309	N	3/9/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090416	N	4/16/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090514	N	5/14/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090717	N	7/17/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090909	N	9/9/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-091112	N	11/12/2009	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100217	N	2/17/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100517	N	5/17/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100816	N	8/16/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-101108	N	11/8/2010	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110216	N	2/16/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110503	N	5/3/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110801	N	8/1/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-111101	N	11/1/2011	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-103	BDC-DUP1-180205	FD	2/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180205	N	2/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-180501	FD	5/1/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180501	N	5/1/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-180806	FD	8/6/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-180806	N	8/6/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-181105	N	11/5/2018	--	**0.31**	--	--	--	**0.91**	--	--	--	--	--	**0.47**	--	--	--	--	0.20 U	**1.37**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-181105	FD	11/5/2018	--	**0.30**	--	--	--	**0.87**	--	--	--	--	--	**0.50**	--	--	--	--	0.20 U	**1.38**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP1-190206	FD	2/6/2019	--	**0.44**	--	--	--	**0.87**	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	**0.91**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-190206	N	2/6/2019	--	**0.40**	--	--	--	**0.79**	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	**0.79**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-190502	FD	5/2/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-190502	N	5/2/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-103-191105	N	11/5/2019	--	**24.8**	--	--	--	**58.3**	--	--	--	--	--	**0.99**	--	--	--	--	0.20 U	**59.3**	--	--	--	--	--	--	--	--	--	--
BDC-103	BDC-DUP2-191105	FD	11/5/2019	--	**25.2**	--	--	--	**59.4**	--	--	--	--	--	**1.04**	--	--	--	--	0.20 U	**60.5**	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080218	N	2/18/2008	--	**47**	--	--	--	**180**	--	--	--	--	--	**28**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080327	N	3/27/2008	--	**22**	--	--	--	**220**	--	--	--	--	--	**52**	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080515	N	5/15/2008	--	**7**	--	--	--	**26**	--	--	--	--	--	**22**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080716	N	7/16/2008	--	**3.3**	--	--	--	**110**	--	--	--	--	--	**50**	--	--	--	--	**2.9**	**160**	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-080915	N	9/15/2008	--	1 U	--	--	--	**20**	--	--	--	--	--	**16**	--	--	--	--	**2.6**	**36**	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-081120	N	11/20/2008	--	1 U	--	--	--	**1.4**	--	--	--	--	--	**4.1**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090116	N	1/16/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	**5.5**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090211	N	2/11/2009	--	1 U	--	--	--	**1.3**	--	--	--	--	--	**1.1**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090309	N	3/9/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090416	N	4/16/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	**1.6**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090514	N	5/14/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	**1.4**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090717	N	7/17/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-090909	N	9/9/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-091112	N	11/12/2009	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100217	N	2/17/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100517	N	5/17/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-100816	N	8/16/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-101108	N	11/8/2010	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110216	N	2/16/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110503	N	5/3/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-110801	N	8/1/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-111101	N	11/1/2011	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-104	BDC-104-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-120503	N	5/3/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-121113	N	11/13/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130520	N	5/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-131119	N	11/19/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140506	N	5/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140807	N	8/7/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-141104	N	11/4/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150428	N	4/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-151026	N	10/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160127	N	1/27/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160413	N	4/13/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180205	N	2/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180501	N	5/1/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180806	N	8/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-181105	N	11/5/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-190206	N	2/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GS1-15	GS1-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GS2-15	GS2-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GS3-15	GS3-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC10-15	ORC10-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC11-15	ORC11-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-104	BDC-104-120219	N	2/19/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-120503	N	5/3/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-120904	N	9/4/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-121113	N	11/13/2012	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130220	N	2/20/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130520	N	5/20/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130828	N	8/28/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-131119	N	11/19/2013	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140211	N	2/11/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140506	N	5/6/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140807	N	8/7/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-141104	N	11/4/2014	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150121	N	1/21/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150428	N	4/28/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150720	N	7/20/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-151026	N	10/26/2015	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160127	N	1/27/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160413	N	4/13/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160809	N	8/9/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-161101	N	11/1/2016	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170207	N	2/7/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170503	N	5/3/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170801	N	8/1/2017	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-171107	N	11/7/2017	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180205	N	2/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180501	N	5/1/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180806	N	8/6/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-181105	N	11/5/2018	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-190206	N	2/6/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-190502	N	5/2/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-191105	N	11/5/2019	--	--	--	--	--	--	0.20 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GS1-15	GS1-15-020506	N	5/6/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GS2-15	GS2-15-020507	N	5/7/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GS3-15	GS3-15-020507	N	5/7/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC10-15	ORC10-15-020507	N	5/7/2002	--	--	--	--	--	--	**12000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC11-15	ORC11-15-020506	N	5/6/2002	--	--	--	--	--	--	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-104	BDC-104-120219	N	2/19/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-120503	N	5/3/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-120904	N	9/4/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-121113	N	11/13/2012	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130220	N	2/20/2013	--	**6.5**	--	--	--	**17**	--	--	--	--	--	**3.3**	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130520	N	5/20/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-130828	N	8/28/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-131119	N	11/19/2013	--	1 U	--	--	--	2 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140211	N	2/11/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140506	N	5/6/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-140807	N	8/7/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-141104	N	11/4/2014	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150121	N	1/21/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150428	N	4/28/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-150720	N	7/20/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-151026	N	10/26/2015	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160127	N	1/27/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160413	N	4/13/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-160809	N	8/9/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-161101	N	11/1/2016	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170207	N	2/7/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170503	N	5/3/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-170801	N	8/1/2017	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-171107	N	11/7/2017	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180205	N	2/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180501	N	5/1/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-180806	N	8/6/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-181105	N	11/5/2018	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-190206	N	2/6/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-190502	N	5/2/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
BDC-104	BDC-104-191105	N	11/5/2019	--	0.20 U	--	--	--	0.40 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U	0.60 U	--	--	--	--	--	--	--	--	--
GS1-15	GS1-15-020506	N	5/6/2002	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--
GS2-15	GS2-15-020507	N	5/7/2002	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--
GS3-15	GS3-15-020507	N	5/7/2002	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--
ORC10-15	ORC10-15-020507	N	5/7/2002	--	**3700**	--	--	--	**12000**	--	--	--	--	--	**5800**	--	--	--	--	**42000**	**17800**	--	--	--	--	--	--	--	--	--
ORC11-15	ORC11-15-020506	N	5/6/2002	--	**370**	--	--	--	**1300**	--	--	--	--	--	**440**	--	--	--	--	**22**	**1740**	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ORC1-15	ORC1-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC12-15	ORC12-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC13-15	ORC13-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC2-15	ORC2-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC3-15	ORC3-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC4-15	ORC4-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC5-15	ORC5-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC6-15	ORC6-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC7-15	ORC7-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC8-15	ORC8-15-020506	N	5/6/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC9-15	ORC9-15-020507	N	5/7/2002	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-07	SB-07 LOWER-010123	N	1/23/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-07	SB-07 UPPER-010123	N	1/23/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-08	SB-08 LOWER-010123	N	1/23/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-08	SB-08 UPPER-010123	N	1/23/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-09	SB-09 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-09	SB-09 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-10	SB-10 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-10	SB-10 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-11	SB-11 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-11	SB-11 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	SB-12 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	SB-12 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Museum of Flight																															
MW-2	MW-2-980608	N	6/8/1998	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.0 U	--	1.0 U	1.0 U
MW-5	MW-5-980608	N	6/8/1998	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	2.0 U	--	1.0 U	1.0 U
MW-7	DC-MOF-MW7-010612	N	6/12/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	DC-MOF-MW8-010612	N	6/12/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SWMU-17																															
BDC-05-01	BDC-05-01-860715	N	7/15/1986	--	**83**	1 U	1 U	--	**1**	1 U	--	--	--	1 U	--	--	--	1 U	1 U	--	1 U	--	1 U	--	1 U	--	1 U	--	1 U	1 U	1 U	--	1 U
BDC-05-01	BDC-05-01-870311	N	3/11/1987	--	**57**	2.1 U	1.6 U	--	2 U	4.5 U	--	--	--	1.8 U	--	--	5 U	0.2 U	2.3 U	--	1.6 U	--	0.3 U	--	0.9 U	--	6.3 U	2.6 U	0.1 U	--	1.9 U
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	**38**	3 U	1 U	--	1 U	1 U	--	--	--	--	--	--	--	--	1 U	1 U	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	**59**	3 U	1 U	--	1 U	1 U	--	--	--	--	--	--	--	--	1 U	1 U	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-02	BDC-05-02-860715	N	7/15/1986	--	**200**	1 U	1 U	--	**5 J**	1 U	--	--	--	1 U	--	--	--	1 U	1 U	--	1 U	--	1 U	--	1 U	--	1 U	1 U	1 U	--	1 U
BDC-05-02	BDC-05-02-861118	N	11/18/1986	--	**160**	1 U	1 U	--	**5 J**	1 U	--	--	--	--	--	--	--	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	--	1 U
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	--	**710**	1 U	1 U	--	**28**	1 U	--	--	--	1 U	--	--	--	1 U	1 U	--	1 U	--	1 U	--	1 U	--	1 U	1 U	1 U	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
ORC1-15	ORC1-15-020506	N	5/6/2002	--	--	--	--	--	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC12-15	ORC12-15-020507	N	5/7/2002	--	--	--	--	--	--	**2.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC13-15	ORC13-15-020507	N	5/7/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC2-15	ORC2-15-020506	N	5/6/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC3-15	ORC3-15-020507	N	5/7/2002	--	--	--	--	--	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC4-15	ORC4-15-020506	N	5/6/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC5-15	ORC5-15-020506	N	5/6/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC6-15	ORC6-15-020507	N	5/7/2002	--	--	--	--	--	--	2.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC7-15	ORC7-15-020506	N	5/6/2002	--	--	--	--	--	--	**28000**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC8-15	ORC8-15-020506	N	5/6/2002	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORC9-15	ORC9-15-020507	N	5/7/2002	--	--	--	--	--	--	**1.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-07	SB-07 LOWER-010123	N	1/23/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-07	SB-07 UPPER-010123	N	1/23/2001	--	--	--	--	--	--	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-08	SB-08 LOWER-010123	N	1/23/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-08	SB-08 UPPER-010123	N	1/23/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-09	SB-09 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-09	SB-09 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	**99**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-10	SB-10 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-10	SB-10 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	**23**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-11	SB-11 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-11	SB-11 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	SB-12 LOWER-010124	N	1/24/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	SB-12 UPPER-010124	N	1/24/2001	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Museum of Flight																											
MW-2	MW-2-980608	N	6/8/1998	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
MW-5	MW-5-980608	N	6/8/1998	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
MW-7	DC-MOF-MW7-010612	N	6/12/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	DC-MOF-MW8-010612	N	6/12/2001	--	--	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SWMU-17																											
BDC-05-01	BDC-05-01-860715	N	7/15/1986	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--	1 U	--
BDC-05-01	BDC-05-01-870311	N	3/11/1987	--	--	3.6 U	11.6 U	--	--	1.7 U	--	--	1.3 U	--	1.9 U	4.2 U	2 U	1.7 U	1.3 U	4.4 U	2.5 U	3.2 U	--	1.7 U	--	1.6 U	--
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	1 U	3 U	--	3 U	--
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	1 U	3 U	--	3 U	--
BDC-05-02	BDC-05-02-860715	N	7/15/1986	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--	1 U	--
BDC-05-02	BDC-05-02-861118	N	11/18/1986	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**5 J**	1 U	--	1 U	--	1 U	--
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**5 J**	1 U	--	1 U	--	1 U	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ORC1-15	ORC1-15-020506	N	5/6/2002	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--
ORC12-15	ORC12-15-020507	N	5/7/2002	--	**350**	--	--	--	**2600**	--	--	--	--	--	**55**	--	--	--	--	**1.1**	**2655**	--	--	--	--	--	--	--	--	--	--
ORC13-15	ORC13-15-020507	N	5/7/2002	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--
ORC2-15	ORC2-15-020506	N	5/6/2002	--	1.0 U	--	--	--	**13**	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	**13**	--	--	--	--	--	--	--	--	--	--
ORC3-15	ORC3-15-020507	N	5/7/2002	--	1.0 U	--	--	--	**2.2**	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	**3.2**	--	--	--	--	--	--	--	--	--	--
ORC4-15	ORC4-15-020506	N	5/6/2002	--	**1.3**	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--
ORC5-15	ORC5-15-020506	N	5/6/2002	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--
ORC6-15	ORC6-15-020507	N	5/7/2002	--	**2300**	--	--	--	**7800**	--	--	--	--	--	**2700**	--	--	--	--	**440**	**10500**	--	--	--	--	--	--	--	--	--	--
ORC7-15	ORC7-15-020506	N	5/6/2002	--	**3200**	--	--	--	**11000**	--	--	--	--	--	**5300**	--	--	--	--	**47000**	**16300**	--	--	--	--	--	--	--	--	--	--
ORC8-15	ORC8-15-020506	N	5/6/2002	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	2.0 U	--	--	--	--	--	--	--	--	--	--
ORC9-15	ORC9-15-020507	N	5/7/2002	--	**64**	--	--	--	**63**	--	--	--	--	--	**21**	--	--	--	--	**2.1**	**84**	--	--	--	--	--	--	--	--	--	--
SB-07	SB-07 LOWER-010123	N	1/23/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
SB-07	SB-07 UPPER-010123	N	1/23/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	**7.3**	--	--	--	--	--	--	--	--	--	--
SB-08	SB-08 LOWER-010123	N	1/23/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
SB-08	SB-08 UPPER-010123	N	1/23/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
SB-09	SB-09 LOWER-010124	N	1/24/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
SB-09	SB-09 UPPER-010124	N	1/24/2001	--	**33**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	**153**	--	--	--	--	--	--	--	--	--	--
SB-10	SB-10 LOWER-010124	N	1/24/2001	--	**4.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.9**	**26**	--	--	--	--	--	--	--	--	--	--
SB-10	SB-10 UPPER-010124	N	1/24/2001	--	**4600**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**18000**	**25000**	--	--	--	--	--	--	--	--	--	--
SB-11	SB-11 LOWER-010124	N	1/24/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
SB-11	SB-11 UPPER-010124	N	1/24/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
SB-12	SB-12 LOWER-010124	N	1/24/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
SB-12	SB-12 UPPER-010124	N	1/24/2001	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	--	--	--	--	--	--	--	--	--	--
Museum of Flight																														
MW-2	MW-2-980608	N	6/8/1998	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	--	--	--	1.0 U
MW-5	MW-5-980608	N	6/8/1998	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	--	--	--	1.0 U
MW-7	DC-MOF-MW7-010612	N	6/12/2001	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--
MW-8	DC-MOF-MW8-010612	N	6/12/2001	--	1.0 U	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--
SWMU-17																														
BDC-05-01	BDC-05-01-860715	N	7/15/1986	--	1 U	--	1 U	--	--	--	**5 J**	1 U	--	--	1 U	--	1 U	--	**6**	1 U	--	1 U	1 U	--	**16**	--	--	--	1 U	1 U
BDC-05-01	BDC-05-01-870311	N	3/11/1987	--	2.1 U	--	1.8 U	--	--	--	3.3 U	3.2 U	--	--	--	--	2.7 U	--	**5.9**	1.5 U	2.4 U	2.7 U	1.7 U	--	**16**	5 U	--	**46**	5.8 U	3.7 U
BDC-05-01	BDC-05-01-880204	N	2/4/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**5**	1 U	1 U	1 U	3 U	--	**11**	--	--	--	1 U	1 U
BDC-05-01	BDC-05-01-DUP-880204	FD	2/4/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**8**	1 U	1 U	1 U	3 U	--	**19**	--	--	--	1 U	1 U
BDC-05-02	BDC-05-02-860715	N	7/15/1986	--	1 U	--	1 U	--	--	--	**5 J**	1 U	--	--	1 U	--	1 U	--	**22**	1 U	--	**5 J**	1 U	--	**45**	--	--	--	1 U	1 U
BDC-05-02	BDC-05-02-861118	N	11/18/1986	--	1 U	--	--	--	--	--	**5 J**	--	--	--	1 U	--	1 U	--	**23**	1 U	--	**5 J**	1 U	--	**46**	--	--	--	1 U	1 U
BDC-05-02	BDC-05-02A-870204	N	2/4/1987	--	1 U	--	1 U	--	--	--	**17**	1 U	--	--	1 U	--	1 U	--	**79**	1 U	--	**5 J**	1 U	--	1 U	--	--	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02A-870311	N	3/11/1987	--	**600**	2.1 U	1.6 U	--	**15**	**0.8 J**	--	--	--	1.8 U	--	--	**8.3**	0.2 U	2.3 U	--	1.6 U	--	0.3 U	--	0.9 U	--	6.3 U	2.6 U	0.1 U	--	1.9 U
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	**17**	3 U	1 U	--	**1**	1 U	--	--	--	--	--	--	--	--	1 U	**3**	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	**130**	3 U	1 U	--	**7**	1 U	--	--	--	--	--	--	--	--	1 U	**19**	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	5 U	5 U	5 U	--	5 U	5 U	--	--	--	1 U	--	--	--	1 U	5 U	--	5 U	--	1 U	--	1 U	--	20 U	10 U	1 U	--	5 U
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	1 U	**4.6 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	1 U	1 U	1 U
BDC-05-02	BDC-05-02A-980608	N	6/8/1998	1 U	**4**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	1 U	**6.5**	1 U	1 U	--	**1.1**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	1 U	**7.4**	1 U	1 U	--	**1.2**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-02	BDC-05-02A-001206	N	12/6/2000	1 U	**1.73**	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-010611	N	6/11/2001	1 U	**7.29 J**	1 U	1 U	--	**1.22 J**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-011203	N	12/3/2001	1 U	**8.8**	1 U	1 U	--	**1.4**	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-020604	N	6/4/2002	1 U	**6.5**	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-030603	N	6/3/2003	1 U	**5.2**	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-031119	N	11/19/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-2-040429	N	4/29/2004	1.0 U	**6.9**	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	3.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-05-02	BDC-05-02-041018	N	10/18/2004	1 U	**1.7**	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-050510	N	5/10/2005	1 U	**5**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-051116	N	11/16/2005	1 U	**1.6**	1 U	1 U	--	**1**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-060515	N	5/15/2006	1 U	**5.8**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-061120	N	11/20/2006	0.2 U	**0.5**	0.2 U	0.2 U	--	**0.5**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-05-02	BDC-05-02-070521	N	5/21/2007	1 U	**3.8**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-071126	N	11/26/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-080522	N	5/22/2008	0.2 U	**2.8**	0.2 U	0.2 U	--	**0.6**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-02	BDC-05-02-081023	N	10/23/2008	1 U	**8**	1 U	1 U	--	**2.8**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-081120	N	11/20/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.5**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**37**	1 U	--	0.2 U	**4.4**
BDC-05-02	BDC-05-02-081216	N	12/16/2008	1 U	1 U	1 U	1 U	--	**1.6**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**38**	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-090116	N	1/16/2009	1 U	1 U	1 U	1 U	--	**4.1**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**55 J**	5 U	--	1 U	**20**
BDC-05-02	BDC-05-02-090211	N	2/11/2009	1 U	1 U	1 U	1 U	--	**3.2**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**20**	5 U	--	1 U	**7.2**
BDC-05-02	BDC-05-02-090309	N	3/9/2009	1 U	1 U	1 U	1 U	--	**1.9**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**38**	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-090416	N	4/16/2009	1 U	1 U	1 U	1 U	--	**1.5**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**68**	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-090513	N	5/13/2009	1 U	1 U	1 U	1 U	--	**1.1**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**44**	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-090816	N	8/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**42**	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-091113	N	11/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**16**	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-100216	N	2/16/2010	1 UJ	1 UJ	1 UJ	1 UJ	--	1 UJ	1 UJ	1 UJ	5 UJ	2 UJ	5 UJ	1 UJ	5 UJ	--	1 UJ	1 UJ	--	1 UJ	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	**8.6 J**	5 UJ	--	1 UJ	5 UJ
BDC-05-02	BDC-05-02-100518	N	5/18/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-02	BDC-05-02A-870311	N	3/11/1987	--	--	3.6 U	11.6 U	--	--	1.7 U	--	--	1.3 U	--	1.9 U	4.2 U	2 U	1.7 U	1.3 U	4.4 U	2.5 U	3.2 U	--	1.7 U	--	1.6 U	--
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	**3**	3 U	--	3 U	--
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	**19**	3 U	--	3 U	--
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.1 J**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-980608	N	6/8/1998	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-001206	N	12/6/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.48**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02A-010611	N	6/11/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**2.9 J**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-011203	N	12/3/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**4.8**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-020604	N	6/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-030603	N	6/3/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-031119	N	11/19/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-02	BDC-05-2-040429	N	4/29/2004	1.0 U	1.0 U	5.0 U	5.0 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.3**	1.0 U	--	1.0 U	1.0 U
BDC-05-02	BDC-05-02-041018	N	10/18/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.2**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-050510	N	5/10/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-051116	N	11/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.1**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-061120	N	11/20/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.4**	0.2 U	--	0.2 U	0.2 U
BDC-05-02	BDC-05-02-070521	N	5/21/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-071126	N	11/26/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-080522	N	5/22/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.2**	0.2 U	--	0.2 U	0.2 U
BDC-05-02	BDC-05-02-081023	N	10/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.9**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-081120	N	11/20/2008	0.2 U	0.2 U	2.5 U	**16**	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	**1**	0.2 U	**0.7**	0.2 U	--	0.2 U	0.2 U
BDC-05-02	BDC-05-02-081216	N	12/16/2008	1 U	1 U	5 U	**34**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-090116	N	1/16/2009	1 U	1 U	5 U	**130**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.7**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-090211	N	2/11/2009	1 U	1 U	5 U	**220**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**12**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-090309	N	3/9/2009	1 U	1 U	5 U	**190**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	1 U	**25**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-090416	N	4/16/2009	1 U	1 U	5 U	**370**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	1 U	**41**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-090513	N	5/13/2009	1 U	1 U	5 U	**290**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	1 U	**35**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-090816	N	8/16/2009	1 U	1 U	5 U	**220**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**49**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-091113	N	11/13/2009	1 U	1 U	5 U	**110**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	**1 J**	1 U	1 U	**70**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-100216	N	2/16/2010	1 UJ	1 UJ	5 UJ	**24 J**	10 UJ	5 UJ	1 UJ	1 UJ	1 UJ	1 UJ	2 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	**1.1 J**	1 UJ	1 UJ	**54 J**	1 UJ	--	1 UJ	1 UJ
BDC-05-02	BDC-05-02-100518	N	5/18/2010	1 U	1 U	5 UJ	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**32**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02A-870311	N	3/11/1987	--	2.1 U	--	1.8 U	--	--	--	3.3 U	3.2 U	--	--	--	--	2.7 U	--	**49**	1.5 U	2.4 U	**39**	1.7 U	--	**290**	5 U	--	**120**	5.8 U	3.7 U
BDC-05-02	BDC-05-02A-880203	N	2/3/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**2**	1 U	1 U	1 U	3 U	--	**16**	--	--	--	1 U	1 U
BDC-05-02	BDC-05-02A-DUP-880203	FD	2/3/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**20**	1 U	1 U	1 U	3 U	--	**99**	--	--	--	1 U	1 U
BDC-05-02	BDC-05-02A-951026	N	10/26/1995	--	5 U	--	2 U	--	--	--	5 U	1 U	--	--	--	--	5 U	--	5 U	5 U	10 U	5 U	5 U	--	**13.24**	--	--	--	--	5 U
BDC-05-02	BDC-05-02A-970519	N	5/19/1997	1 U	1 U	1 U	2 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**7.9 J**	1 U	2 U	1 U	1 U	--	**17.2**	1 U	--	--	--	1 U
BDC-05-02	BDC-05-02A-980608	N	6/8/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**6.7**	1 U	2 U	1 U	1 U	--	**12.4**	1 U	--	--	--	1 U
BDC-05-02	BDC-05-02A-991122	N	11/22/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**15.8**	1 U	1 U	1 U	1 U	--	**30.2**	1.46 U	--	--	--	1 U
BDC-05-02	BDC-05-02A-000531	N	5/31/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**19.8**	1 U	1 U	1 U	1 U	--	**39.5**	1.46 U	--	--	--	1 U
BDC-05-02	BDC-05-02A-001206	N	12/6/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**8.67**	1 U	1 U	1 U	1 U	--	**12.64**	1.46 U	--	--	--	1 U
BDC-05-02	BDC-05-02A-010611	N	6/11/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**9.82 J**	1 U	1 U	1 U	1 U	--	**38.94**	1.46 U	--	--	--	1 U
BDC-05-02	BDC-05-02-011203	N	12/3/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**8.2**	**1**	**1.5**	1 U	1 U	--	**37**	1.5 U	--	--	--	1 U
BDC-05-02	BDC-05-02-020604	N	6/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**23**	1 U	--	1 U	1 U	5 U	**38**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.7**	1 U	--	1 U	1 U	5 U	**7.2**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-030603	N	6/3/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**17**	1 U	--	1 U	1 U	5 U	**30**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-031119	N	11/19/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.5**	1 U	--	1 U	1 U	5 U	**10**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-2-040429	N	4/29/2004	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**32**	1.0 U	--	1.0 U	1.0 U	5.0 U	**45**	1.0 U	--	--	5.0 U	1.0 U
BDC-05-02	BDC-05-02-041018	N	10/18/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.2**	1 U	--	1 U	1 U	5 U	**15**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-050510	N	5/10/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**22**	1 U	--	1 U	1 U	5 U	**28**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-051116	N	11/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U	5 U	**16**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**30**	1 U	--	1 U	1 U	5 U	**31**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-061120	N	11/20/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**6.2**	0.2 U	--	0.2 U	0.2 U	1 U	**8.2**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-05-02	BDC-05-02-070521	N	5/21/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U	5 U	**24**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-071126	N	11/26/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**12**	1 U	--	1 U	1 U	5 U	**14**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-080522	N	5/22/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**14**	0.2 U	--	0.2 U	0.2 U	1 U	**20**	0.2 U	**0.4**	--	1 U	0.2 U
BDC-05-02	BDC-05-02-081023	N	10/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**31**	1 U	--	1 U	1 U	5 U	**62**	1 U	**2.2**	--	5 U	1 U
BDC-05-02	BDC-05-02-081120	N	11/20/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**5.1**	0.2 U	--	0.2 U	0.2 U	1 U	**4.2**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-02	BDC-05-02-081216	N	12/16/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.6**	1 U	--	1 U	1 U	5 U	**7.3**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-090116	N	1/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.5**	1 U	--	1 U	1 U	5 U	**22**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-090211	N	2/11/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.5**	1 U	--	1 U	1 U	5 U	**17**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-090309	N	3/9/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.1**	1 U	--	1 U	1 U	5 U	**8.1**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-090416	N	4/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.3**	1 U	--	1 U	1 U	5 U	**6**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-090513	N	5/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.4**	1 U	--	1 U	1 U	5 U	**4.6**	1 U	2 U	--	5 U	**1.4**
BDC-05-02	BDC-05-02-090816	N	8/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U	5 U	**1.1**	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-091113	N	11/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-100216	N	2/16/2010	--	1 UJ	1 UJ	5 UJ	1 UJ	2 UJ	1 UJ	2 UJ	5 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	**1.4 J**	--	1 UJ	1 UJ	5 UJ	1 UJ	1 UJ	2 UJ	--	5 UJ	1 UJ
BDC-05-02	BDC-05-02-100518	N	5/18/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	--	1 U	1 U	5 U	**1**	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-100817	N	8/17/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-101109	N	11/9/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-110215	N	2/15/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-02	BDC-05-02-110502	N	5/2/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-05-02	BDC-05-02-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-DUP-131113	FD	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-02	BDC-05-02-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-100817	N	8/17/2010	1 U	1 U	5 UJ	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	**23**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-101109	N	11/9/2010	1 U	1 U	5 U	**18 J**	10 U	5 U	1 U	1 U	1 U	1 U	2 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	**14 J**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-110215	N	2/15/2011	1 U	1 U	5 U	**13**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U
BDC-05-02	BDC-05-02-110502	N	5/2/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	**0.6 J**	0.2 U	0.5 U	**22**	0.2 U	--	0.2 U	0.2 U
BDC-05-02	BDC-05-02-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
BDC-05-02	BDC-05-02-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**150**	--	--	--	--
BDC-05-02	BDC-05-02-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**220**	--	--	--	--
BDC-05-02	BDC-05-02-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**180**	--	--	--	--
BDC-05-02	BDC-05-02-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**57**	--	--	--	--
BDC-05-02	BDC-05-02-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**32**	--	--	--	--
BDC-05-02	BDC-05-02-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-05-02	BDC-05-02-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-02	BDC-05-02-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-02	BDC-05-02-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-05-02	BDC-05-02-DUP-131113	FD	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-02	BDC-05-02-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-02	BDC-05-02-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--
BDC-05-02	BDC-05-02-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-02	BDC-05-02-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--
BDC-05-02	BDC-05-02-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-05-02	BDC-05-02-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-05-02	BDC-05-02-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-05-02	BDC-05-02-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-02	BDC-05-02-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-02	BDC-05-02-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--
BDC-05-02	BDC-05-02-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-02	BDC-05-02-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-02	BDC-05-02-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-02	BDC-05-02-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-05-02	BDC-05-02-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-02	BDC-05-02-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-02	BDC-05-02-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-02	BDC-05-02-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**15.4**	--	--	--	--
BDC-05-02	BDC-05-02-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--
BDC-05-02	BDC-05-02-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.10**	--	--	--	--
BDC-05-02	BDC-05-02-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.70**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-02	BDC-05-02-100817	N	8/17/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-101109	N	11/9/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 UJ	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-110215	N	2/15/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-02	BDC-05-02-110502	N	5/2/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.6**	**0.8**	--	**0.6**	0.2 U	1 U	**0.9**	0.2 U	0.2 U	--	1 U	**0.3**
BDC-05-02	BDC-05-02-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-05-02	BDC-05-02-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.4**	--	--	--	--	--	**4.8**	--	--	--	--	**1.6**
BDC-05-02	BDC-05-02-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4 U	--	--	--	--	--	4 U	--	--	--	--	4 U
BDC-05-02	BDC-05-02-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	2 U
BDC-05-02	BDC-05-02-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	2 U
BDC-05-02	BDC-05-02-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**5.5**
BDC-05-02	BDC-05-02-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.7**
BDC-05-02	BDC-05-02-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.5**	--	--	--	--	**0.6**
BDC-05-02	BDC-05-02-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.4**	--	--	--	--	**0.2**
BDC-05-02	BDC-05-02-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.5**	--	--	--	--	**0.6**
BDC-05-02	BDC-05-02-DUP-131113	FD	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.5**	--	--	--	--	**0.6**
BDC-05-02	BDC-05-02-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-02	BDC-05-02-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	**1.1**	--	--	--	--	**2.4**
BDC-05-02	BDC-05-02-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**4.1**
BDC-05-02	BDC-05-02-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--	--	**0.7**	--	--	--	--	**0.6**
BDC-05-02	BDC-05-02-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	**0.6**	--	--	--	--	**1.7**
BDC-05-02	BDC-05-02-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.7**	--	--	--	--	--	**1.1**	--	--	--	--	**3.4**
BDC-05-02	BDC-05-02-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--	--	**1.2**	--	--	--	--	**3.6**
BDC-05-02	BDC-05-02-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--	--	**1.4**	--	--	--	--	**0.7**
BDC-05-02	BDC-05-02-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-02	BDC-05-02-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.9**	--	--	--	--	--	**1.7**	--	--	--	--	**1.8**
BDC-05-02	BDC-05-02-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--	--	**1.4**	--	--	--	--	**0.6**
BDC-05-02	BDC-05-02-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--	--	**1.6**	--	--	--	--	0.2 U
BDC-05-02	BDC-05-02-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-02	BDC-05-02-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--	--	**1.6**	--	--	--	--	**0.5**
BDC-05-02	BDC-05-02-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--	--	**2**	--	--	--	--	**0.4**
BDC-05-02	BDC-05-02-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--	--	**2.5**	--	--	--	--	0.2 U
BDC-05-02	BDC-05-02-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--	--	**3.6**	--	--	--	--	0.2 U
BDC-05-02	BDC-05-02-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.70**	--	--	--	--	--	**3.75**	--	--	--	--	2.00 U
BDC-05-02	BDC-05-02-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U
BDC-05-02	BDC-05-02-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.41**	--	--	--	--	--	**0.21**	--	--	--	--	0.20 U
BDC-05-02	BDC-05-02-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-860715	N	7/15/1986	--	**76**	1 U	1 U	--	**18**	1 U	--	--	--	1 U	--	--	--	1 U	1 U	--	1 U	--	1 U	--	1 U	--	1 U	1 U	1 U	--	1 U
BDC-05-03	BDC-05-03-861118	N	11/18/1986	--	**97**	1 U	1 U	--	1 U	**5 J**	--	--	--	--	--	--	--	--	1 U	--	1 U	--	--	--	--	--	1 U	1 U	--	1 U
BDC-05-03	BDC-05-03-870311	N	3/11/1987	--	**65**	2.1 U	1.6 U	--	**4.4**	4.5 U	--	--	--	1.8 U	--	--	**40**	0.2 U	2.3 U	--	1.6 U	--	0.3 U	--	0.9 U	--	6.3 U	2.6 U	0.1 U	--	1.9 U
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	**120**	3 U	1 U	--	**13**	1 U	--	--	--	--	--	--	--	--	1 U	**12**	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	**130**	3 U	1 U	--	**14**	1 U	--	--	--	--	--	--	--	--	1 U	**12**	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	5 U	5 U	5 U	--	5 U	5 U	--	--	--	1 U	--	--	--	1 U	5 U	--	5 U	--	1 U	--	1 U	--	20 U	10 U	1 U	--	5 U
BDC-05-03	BDC-05-03-991122	N	11/22/1999	1 U	**1.7 J**	1 U	1 U	--	**1.8 J**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-000531	N	5/31/2000	1 U	**2.2**	1 U	1 U	--	**2.5**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-03	BDC-05-03-001206	N	12/6/2000	1 U	**1.57**	1 U	1 U	--	**1.46**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-010611	N	6/11/2001	1 U	**1.77 J**	1 U	1 U	--	**2.7 J**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-011203	N	12/3/2001	1 U	**3.5**	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	**3.3**	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-SPLIT-011203	N	12/3/2001	--	**3.4**	1 U	1 U	--	1 U	1 U	--	--	--	--	--	--	--	--	1 U	--	1 U	--	--	--	--	--	5 U	5 U	--	--	5 U
BDC-05-03	BDC-05-03-020604	N	6/4/2002	1 U	1 U	1 U	1 U	--	**1.6**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-021203	N	12/3/2002	1 U	**1.2**	1 U	1 U	--	**2**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-030603	N	6/3/2003	1 U	**1.1**	1 U	1 U	--	**1.7**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-031119	N	11/19/2003	1 U	1 U	1 U	1 U	--	**2.2**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-3-040429	N	4/29/2004	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	**1.3**	1.0 U	1.0 U	5.0 U	3.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-05-03	BDC-05-03-041018	N	10/18/2004	1 U	1 U	1 U	1 U	--	**1.7**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-050510	N	5/10/2005	1 U	**1.2**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-051116	N	11/16/2005	1 U	**1.6**	1 U	1 U	--	**1.3**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	**1.2**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-061120	N	11/20/2006	0.2 U	**1.6**	0.2 U	0.2 U	--	**0.2**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-05-03	BDC-05-03-070521	N	5/21/2007	1 U	1 U	1 U	1 U	--	**1.4**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-071126	N	11/26/2007	1 U	1 U	1 U	1 U	--	**1.1**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-080522	N	5/22/2008	0.2 U	**0.5**	0.2 U	0.2 U	--	**1.4**	**0.2**	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-03	BDC-05-03-081023	N	10/23/2008	0.2 U	**0.7**	0.2 U	0.2 U	--	**1.8**	**0.2**	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-03	BDC-05-03-081120	N	11/20/2008	0.2 U	**1.2**	0.2 U	0.2 U	--	**0.3**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-03	BDC-05-03-081216	N	12/16/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	**13**
BDC-05-03	BDC-05-03-090116	N	1/16/2009	1 U	**1.4**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-090211	N	2/11/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-090309	N	3/9/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-090416	N	4/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-090513	N	5/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**5.4**	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-090816	N	8/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-091113	N	11/13/2009	1 U	**1.1**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-100216	N	2/16/2010	1 U	**1.4**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-860715	N	7/15/1986	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**5 J**	1 U	--	1 U	--	1 U	--
BDC-05-03	BDC-05-03-861118	N	11/18/1986	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**5 J**	1 U	--	1 U	--	1 U	--
BDC-05-03	BDC-05-03-870311	N	3/11/1987	--	--	3.6 U	11.6 U	--	--	1.7 U	--	--	1.3 U	--	1.9 U	4.2 U	2 U	1.7 U	1.3 U	4.4 U	2.5 U	3.2 U	--	1.7 U	--	1.6 U	--
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	**12**	3 U	--	3 U	--
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	**12**	3 U	--	3 U	--
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
BDC-05-03	BDC-05-03-991122	N	11/22/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**3.1 J**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-000531	N	5/31/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**8.7**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-001206	N	12/6/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**4.7**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-010611	N	6/11/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**11.62**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-011203	N	12/3/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-SPLIT-011203	N	12/3/2001	--	--	5 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--
BDC-05-03	BDC-05-03-020604	N	6/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.5**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-030603	N	6/3/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.3**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-031119	N	11/19/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-3-040429	N	4/29/2004	1.0 U	1.0 U	5.0 U	5.0 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**8.2**	1.0 U	--	1.0 U	1.0 U
BDC-05-03	BDC-05-03-041018	N	10/18/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-050510	N	5/10/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.3**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-051116	N	11/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.5**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-061120	N	11/20/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.2**	0.2 U	--	0.2 U	0.2 U
BDC-05-03	BDC-05-03-070521	N	5/21/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-071126	N	11/26/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.2**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-080522	N	5/22/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**13**	0.2 U	--	0.2 U	0.2 U
BDC-05-03	BDC-05-03-081023	N	10/23/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**17**	0.2 U	--	0.2 U	0.2 U
BDC-05-03	BDC-05-03-081120	N	11/20/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.7**	0.2 U	--	0.2 U	0.2 U
BDC-05-03	BDC-05-03-081216	N	12/16/2008	1 U	1 U	**7.8**	**9.4**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.8**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-090116	N	1/16/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-090211	N	2/11/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.4**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-090309	N	3/9/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-090416	N	4/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.8**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-090513	N	5/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.4**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-090816	N	8/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**8.1**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-091113	N	11/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-100216	N	2/16/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-860715	N	7/15/1986	--	1 U	--	1 U	--	--	--	**5 J**	1 U	--	--	1 U	--	1 U	--	**5 J**	1 U	--	**5 J**	1 U	--	**32**	--	--	--	1 U	1 U
BDC-05-03	BDC-05-03-861118	N	11/18/1986	--	1 U	--	--	--	--	--	1 U	--	--	--	1 U	--	1 U	--	**10**	1 U	--	**5 J**	1 U	--	**49**	--	--	--	1 U	1 U
BDC-05-03	BDC-05-03-870311	N	3/11/1987	--	2.1 U	--	1.8 U	--	--	--	3.3 U	3.2 U	--	--	--	--	2.7 U	--	**1.3**	1.5 U	2.4 U	2.7 U	1.7 U	--	**15**	5 U	--	**270**	5.8 U	3.7 U
BDC-05-03	BDC-05-03-880203	N	2/3/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**22**	1 U	1 U	1 U	3 U	--	**71**	--	--	--	1 U	1 U
BDC-05-03	BDC-05-03-DUP-880203	FD	2/3/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**22**	1 U	1 U	1 U	3 U	--	**70**	--	--	--	1 U	1 U
BDC-05-03	BDC-05-03-951031	N	10/31/1995	--	5 U	--	2 U	--	--	--	5 U	1 U	--	--	--	--	5 U	--	**5.9 J**	5 U	10 U	5 U	5 U	--	**24.59**	--	--	--	--	5 U
BDC-05-03	BDC-05-03-991122	N	11/22/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**6 J**	1 U	1 U	**1.6 J**	1 U	--	**12.2**	1.46 U	--	--	--	1 U
BDC-05-03	BDC-05-03-000531	N	5/31/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**5.4**	1 U	1 U	**1.6**	1 U	--	**18**	1.46 U	--	--	--	1 U
BDC-05-03	BDC-05-03-001206	N	12/6/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**4.49**	1 U	1 U	1 U	1 U	--	**13.4**	1.46 U	--	--	--	1 U
BDC-05-03	BDC-05-03-010611	N	6/11/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.6 J**	1 U	1 U	**3.91 J**	1 U	--	**17.59**	1.46 U	--	--	--	1 U
BDC-05-03	BDC-05-03-011203	N	12/3/2001	1.1 U	**3.5**	1 U	1 U	1 U	--	--	1 U	**7.7**	1 U	1 U	--	1 U	1 U	1 U	**1.7**	**8.6**	**20**	**1.1**	1 U	--	**3.6**	1.5 U	--	--	--	1 U
BDC-05-03	BDC-05-03-SPLIT-011203	N	12/3/2001	--	1 U	--	--	--	1 U	--	2 U	--	--	--	1 U	--	1 U	--	**1.1**	1 U	--	1 U	1 U	--	**3.6**	1 U	**2.7**	--	5 U	1 U
BDC-05-03	BDC-05-03-020604	N	6/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.1**	1 U	--	1 U	1 U	5 U	**11**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.4**	1 U	--	**2.3**	1 U	5 U	**11**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-030603	N	6/3/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.3**	1 U	--	**1.0**	1 U	5 U	**9.9**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-031119	N	11/19/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.5**	1 U	--	**2.7**	1 U	5 U	**12**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-3-040429	N	4/29/2004	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.4**	1.0 U	--	1.0 U	1.0 U	5.0 U	**8.6**	1.0 U	--	--	5.0 U	1.0 U
BDC-05-03	BDC-05-03-041018	N	10/18/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.1**	1 U	--	**1.6**	1 U	5 U	**11**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-050510	N	5/10/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U	5 U	**5.3**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-051116	N	11/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.8**	1 U	--	1 U	1 U	5 U	**6.7**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.2**	1 U	--	1 U	1 U	5 U	**6.4**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-061120	N	11/20/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.7**	0.2 U	--	**0.3**	0.2 U	1 U	**2.4**	0.2 U	**1**	--	0.2 U	0.2 U
BDC-05-03	BDC-05-03-070521	N	5/21/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.5**	1 U	--	**1.8**	1 U	5 U	**8.1**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-071126	N	11/26/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	**1.6**	1 U	5 U	**4.4**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-080522	N	5/22/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**3.8**	0.2 U	--	**1.6**	0.2 U	1 U	**8.5**	0.2 U	**0.4**	--	1 U	0.2 U
BDC-05-03	BDC-05-03-081023	N	10/23/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**4.2**	0.2 U	--	**1.1**	0.2 U	1 U	**8.2**	0.2 U	**0.8**	--	1 U	0.2 U
BDC-05-03	BDC-05-03-081120	N	11/20/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.8**	0.2 U	--	**0.5**	0.2 U	1 U	**2.1**	0.2 U	**0.9**	--	1 U	0.2 U
BDC-05-03	BDC-05-03-081216	N	12/16/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2**	1 U	--	1 U	1 U	5 U	**4.1**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-090116	N	1/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-090211	N	2/11/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U	5 U	**3.2**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-090309	N	3/9/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U	5 U	**1.7**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-090416	N	4/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U	5 U	**2.2**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-090513	N	5/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**2.1**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-090816	N	8/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2**	1 U	--	**1.2**	1 U	5 U	**4.3**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-091113	N	11/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-100216	N	2/16/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U	5 U	**1**	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-100518	N	5/18/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-100817	N	8/17/2010	1 U	1 U	1 U	1 U	--	**1.2**	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-101109	N	11/9/2010	1 U	**1 J**	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 UJ	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-110215	N	2/15/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-03	BDC-05-03-110502	N	5/2/2011	0.2 U	**1.1**	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-05-03	BDC-05-03-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-DUP-140513	FD	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-03	BDC-05-03-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-870204	N	2/4/1987	--	1 U	1 U	1 U	--	**10**	1 U	--	--	--	1 U	--	--	--	1 U	1 U	--	1 U	--	1 U	--	1 U	--	1 U	1 U	1 U	--	1 U
BDC-05-04	BDC-05-04-870311	N	3/11/1987	--	1.6 U	2.1 U	1.6 U	--	**6.8**	4.5 U	--	--	--	1.8 U	--	--	**28**	0.2 U	2.3 U	--	1.6 U	--	0.3 U	--	0.9 U	--	6.3 U	2.6 U	0.1 U	--	1.9 U
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	5 U	5 U	5 U	--	5 U	5 U	--	--	--	1 U	--	--	--	1 U	5 U	--	5 U	--	1 U	--	1 U	--	20 U	10 U	1 U	--	5 U
BDC-05-04	BDC-05-04-970519	N	5/19/1997	1 U	1 U	1 U	1 U	--	**4 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	1 U	1 U	1 U
BDC-05-04	BDC-05-04-980608	N	6/8/1998	1 U	1 U	1 U	1 U	--	**3.7 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-05-04	BDC-05-04-991122	N	11/22/1999	1 U	1 U	1 U	1 U	--	**3.7 J**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-000531	N	5/31/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-04	BDC-05-04-001206	N	12/6/2000	1 U	1 U	1 U	1 U	--	**3.2**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-010611	N	6/11/2001	1 U	1 U	1 U	1 U	--	**2.45 J**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-011203	N	12/3/2001	1 U	1 U	1 U	1 U	--	**4.8**	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-020604	N	6/4/2002	1 U	1 U	1 U	1 U	--	**2.1**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	**1.4**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-030603	N	6/3/2003	1 U	1 U	1 U	1 U	--	**1.6**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-100518	N	5/18/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.7**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-100817	N	8/17/2010	1 U	1 U	5 UJ	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**14**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-101109	N	11/9/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	**3.7 J**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-110215	N	2/15/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-05-03	BDC-05-03-110502	N	5/2/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.5 U	**0.2**	0.2 U	--	0.2 U	0.2 U
BDC-05-03	BDC-05-03-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--
BDC-05-03	BDC-05-03-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--
BDC-05-03	BDC-05-03-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-03	BDC-05-03-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-03	BDC-05-03-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-DUP-140513	FD	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-03	BDC-05-03-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.49**	--	--	--	--
BDC-05-03	BDC-05-03-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.27**	--	--	--	--
BDC-05-03	BDC-05-03-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.08**	--	--	--	--
BDC-05-03	BDC-05-03-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.87**	--	--	--	--
BDC-05-04	BDC-05-04-870204	N	2/4/1987	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**5 J**	1 U	--	1 U	--	1 U	--
BDC-05-04	BDC-05-04-870311	N	3/11/1987	--	--	3.6 U	11.6 U	--	--	1.7 U	--	--	1.3 U	--	1.9 U	4.2 U	2 U	1.7 U	1.3 U	4.4 U	2.5 U	3.2 U	--	1.7 U	--	1.6 U	--
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
BDC-05-04	BDC-05-04-970519	N	5/19/1997	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**9 J**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-980608	N	6/8/1998	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10.3**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-991122	N	11/22/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**6.2 J**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-000531	N	5/31/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**5.9**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-001206	N	12/6/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**7.9**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-010611	N	6/11/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**7.79 J**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-011203	N	12/3/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-020604	N	6/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.9**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.1**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-030603	N	6/3/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-03	BDC-05-03-100518	N	5/18/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 UJ	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**1.8**	1 UJ	2 UJ	--	5 U	1 U
BDC-05-03	BDC-05-03-100817	N	8/17/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	**1.9**	1 U	5 U	**5.2**	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-101109	N	11/9/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4 J**	1 U	--	1 U	1 U	5 U	**1.7 J**	1 UJ	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-110215	N	2/15/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-03	BDC-05-03-110502	N	5/2/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.7**	0.2 U	--	0.2 U	0.2 U	1 U	**1**	0.2 U	**0.9**	--	1 U	0.2 U
BDC-05-03	BDC-05-03-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--	--	**1.6**	--	--	--	--	**2**
BDC-05-03	BDC-05-03-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--	--	**1.3**	--	--	--	--	**0.3**
BDC-05-03	BDC-05-03-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	**0.7**
BDC-05-03	BDC-05-03-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.5**	--	--	--	--	**1.1**
BDC-05-03	BDC-05-03-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--	--	**1.2**	--	--	--	--	0.2 U
BDC-05-03	BDC-05-03-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-05-03	BDC-05-03-DUP-140513	FD	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-05-03	BDC-05-03-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
BDC-05-03	BDC-05-03-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--	--	**0.4**	--	--	--	--	**0.4**
BDC-05-03	BDC-05-03-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--	--	**0.4**	--	--	--	--	**0.3**
BDC-05-03	BDC-05-03-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	**0.2**	--	--	--	--	0.2 U
BDC-05-03	BDC-05-03-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-05-03	BDC-05-03-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-05-03	BDC-05-03-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-03	BDC-05-03-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U
BDC-05-03	BDC-05-03-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U
BDC-05-03	BDC-05-03-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.22**	--	--	--	--	**1.86**
BDC-05-03	BDC-05-03-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**2.56**
BDC-05-04	BDC-05-04-870204	N	2/4/1987	--	1 U	--	1 U	--	--	--	**5 J**	1 U	--	--	1 U	--	1 U	--	1 U	1 U	--	1 U	1 U	--	1 U	--	--	--	1 U	1 U
BDC-05-04	BDC-05-04-870311	N	3/11/1987	--	2.1 U	--	1.8 U	--	--	--	3.3 U	3.2 U	--	--	--	--	2.7 U	--	1.2 U	1.5 U	2.4 U	**15**	1.7 U	--	**0.6 J**	5 U	--	**10**	5.8 U	3.7 U
BDC-05-04	BDC-05-04-951031	N	10/31/1995	--	5 U	--	2 U	--	--	--	5 U	1 U	--	--	--	--	5 U	--	5 U	5 U	10 U	5 U	5 U	--	5 U	--	--	--	--	5 U
BDC-05-04	BDC-05-04-970519	N	5/19/1997	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	**2.2 J**	1 U	--	--	--	1 U
BDC-05-04	BDC-05-04-980608	N	6/8/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	**1.5 J**	1 U	--	--	--	1 U
BDC-05-04	BDC-05-04-991122	N	11/22/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.6 J**	1.46 U	--	--	--	1 U
BDC-05-04	BDC-05-04-000531	N	5/31/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.5**	1.46 U	--	--	--	1 U
BDC-05-04	BDC-05-04-001206	N	12/6/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.96**	1.46 U	--	--	--	1 U
BDC-05-04	BDC-05-04-010611	N	6/11/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.26 J**	1.46 U	--	--	--	1 U
BDC-05-04	BDC-05-04-011203	N	12/3/2001	1.1 U	**1**	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.4**	**2.3**	**4.8**	1 U	1 U	--	**1.4**	1.5 U	--	--	--	1 U
BDC-05-04	BDC-05-04-020604	N	6/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.1**	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-030603	N	6/3/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-031119	N	11/19/2003	1 U	1 U	1 U	1 U	--	**1.8**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-4-040429	N	4/29/2004	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	**1.3**	1.0 U	1.0 U	5.0 U	3.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-05-04	BDC-05-04-041018	N	10/18/2004	1 U	1 U	1 U	1 U	--	**1.3**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-050510	N	5/10/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-051116	N	11/16/2005	1 U	1 U	1 U	1 U	--	**1.2**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-061120	N	11/20/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	**1**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-05-04	BDC-05-04-070521	N	5/21/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-071126	N	11/26/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-080522	N	5/22/2008	0.2 U	**0.4**	0.2 U	0.2 U	--	**0.8**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-04	BDC-05-04-081023	N	10/23/2008	0.2 U	**0.4**	0.2 U	0.2 U	--	**0.9**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-04	BDC-05-04-081120	N	11/20/2008	0.2 U	**0.2**	0.2 U	0.2 U	--	**1**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-04	BDC-05-04-081216	N	12/16/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-090116	N	1/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-090211	N	2/11/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-090309	N	3/9/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-090416	N	4/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-090513	N	5/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-090816	N	8/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-091113	N	11/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-100216	N	2/16/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-05-04	BDC-05-04-100518	N	5/18/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-100817	N	8/17/2010	1 U	1 U	1 U	1 U	--	**1.4**	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-101109	N	11/9/2010	1 U	1 U	1 U	1 U	--	**1.9 J**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-110215	N	2/15/2011	1 U	1 U	1 U	1 U	--	**1.2**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-04	BDC-05-04-110502	N	5/2/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	**1.4**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-05-04	BDC-05-04-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-031119	N	11/19/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.7**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-4-040429	N	4/29/2004	1.0 U	1.0 U	5.0 U	5.0 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.2**	1.0 U	--	1.0 U	1.0 U
BDC-05-04	BDC-05-04-041018	N	10/18/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-050510	N	5/10/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.5**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-051116	N	11/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-061120	N	11/20/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.1**	0.2 U	--	0.2 U	0.2 U
BDC-05-04	BDC-05-04-070521	N	5/21/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-071126	N	11/26/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-080522	N	5/22/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.2**	0.2 U	--	0.2 U	0.2 U
BDC-05-04	BDC-05-04-081023	N	10/23/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.1**	0.2 U	--	0.2 U	0.2 U
BDC-05-04	BDC-05-04-081120	N	11/20/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**3.6**	0.2 U	--	0.2 U	0.2 U
BDC-05-04	BDC-05-04-081216	N	12/16/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-090116	N	1/16/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-090211	N	2/11/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-090309	N	3/9/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-090416	N	4/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-090513	N	5/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-090816	N	8/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-091113	N	11/13/2009	1 U	1 U	5 U	10 UJ	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-100216	N	2/16/2010	1 U	1 U	5 U	**200**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-100518	N	5/18/2010	1 U	1 U	5 U	**12**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-100817	N	8/17/2010	1 U	1 U	5 UJ	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-101109	N	11/9/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	**4.3 J**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-110215	N	2/15/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.9**	1 U	--	1 U	1 U
BDC-05-04	BDC-05-04-110502	N	5/2/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.5 U	**3.1**	0.2 U	--	0.2 U	0.2 U
BDC-05-04	BDC-05-04-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--
BDC-05-04	BDC-05-04-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--
BDC-05-04	BDC-05-04-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.3**	--	--	--	--
BDC-05-04	BDC-05-04-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--
BDC-05-04	BDC-05-04-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--
BDC-05-04	BDC-05-04-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-04	BDC-05-04-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
BDC-05-04	BDC-05-04-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-05-04	BDC-05-04-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--
BDC-05-04	BDC-05-04-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-031119	N	11/19/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1**	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-4-040429	N	4/29/2004	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-05-04	BDC-05-04-041018	N	10/18/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-050510	N	5/10/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-051116	N	11/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-061120	N	11/20/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.4**	0.2 U	--	0.2 U	0.2 U	1 U	**1**	0.2 U	**0.2**	--	0.2 U	0.2 U
BDC-05-04	BDC-05-04-070521	N	5/21/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-071126	N	11/26/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-080522	N	5/22/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.5**	0.2 U	--	0.2 U	0.2 U	1 U	**0.9**	0.2 U	**0.3**	--	1 U	0.2 U
BDC-05-04	BDC-05-04-081023	N	10/23/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.1**	0.2 U	--	0.2 U	0.2 U	1 U	**0.8**	0.2 U	**0.3**	--	1 U	0.2 U
BDC-05-04	BDC-05-04-081120	N	11/20/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.1**	0.2 U	--	0.2 U	0.2 U	1 U	**0.7**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-04	BDC-05-04-081216	N	12/16/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-090116	N	1/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-090211	N	2/11/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-090309	N	3/9/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-090416	N	4/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-090513	N	5/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-090816	N	8/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-091113	N	11/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-100216	N	2/16/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-100518	N	5/18/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 UJ	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U	5 U	1 U	1 UJ	2 UJ	--	5 U	1 U
BDC-05-04	BDC-05-04-100817	N	8/17/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-101109	N	11/9/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 UJ	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-110215	N	2/15/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-04	BDC-05-04-110502	N	5/2/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	0.2 U	--	0.2 U	0.2 U	1 U	**0.5**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-04	BDC-05-04-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-05-04	BDC-05-04-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	0.5 U
BDC-05-04	BDC-05-04-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.2**	--	--	--	--	**0.4**
BDC-05-04	BDC-05-04-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--	--	**0.4**	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-04	BDC-05-04-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
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				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-04	BDC-05-04-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-870204	N	2/4/1987	--	1 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U	--	--	--	1 U	1 U	--	1 U	--	1 U	--	1 U	--	1 U	1 U	1 U	--	1 U
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	5 U	5 U	5 U	--	5 U	5 U	--	--	--	1 U	--	--	--	1 U	5 U	--	5 U	--	1 U	--	1 U	--	20 U	10 U	1 U	--	5 U
BDC-05-05	BDC-05-05-970519	N	5/19/1997	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	1 U	1 U	1 U
BDC-05-05	BDC-05-05-980608	N	6/8/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-05-05	BDC-05-05-991122	N	11/22/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-000531	N	5/31/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-05	BDC-05-05-001206	N	12/6/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-010611	N	6/11/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-011203	N	12/3/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-020604	N	6/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-030603	N	6/3/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-031119	N	11/19/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-5-040429	N	4/29/2004	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	3.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-05-05	BDC-05-05-041018	N	10/18/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-050510	N	5/10/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-051116	N	11/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-061120	N	11/20/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-05-05	BDC-05-05-070521	N	5/21/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-071126	N	11/26/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-080522	N	5/22/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-05	BDC-05-05-081120	N	11/20/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-05	BDC-05-05-090513	N	5/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-091113	N	11/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-100518	N	5/18/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-101109	N	11/9/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-05	BDC-05-05-110502	N	5/2/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-05-05	BDC-05-05-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--
BDC-05-04	BDC-05-04-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-04	BDC-05-04-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-05-04	BDC-05-04-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.10**	--	--	--	--
BDC-05-04	BDC-05-04-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.31**	--	--	--	--
BDC-05-04	BDC-05-04-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.02**	--	--	--	--
BDC-05-04	BDC-05-04-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.08**	--	--	--	--
BDC-05-05	BDC-05-05-870204	N	2/4/1987	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	--	1 U	--
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
BDC-05-05	BDC-05-05-970519	N	5/19/1997	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-980608	N	6/8/1998	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-991122	N	11/22/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-000531	N	5/31/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-001206	N	12/6/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-010611	N	6/11/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-011203	N	12/3/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	**1.1**	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-020604	N	6/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-030603	N	6/3/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-031119	N	11/19/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-5-040429	N	4/29/2004	1.0 U	1.0 U	5.0 U	5.0 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-05-05	BDC-05-05-041018	N	10/18/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-050510	N	5/10/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-051116	N	11/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-061120	N	11/20/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**3**	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-05-05	BDC-05-05-070521	N	5/21/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**18**	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-071126	N	11/26/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**15**	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-080522	N	5/22/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	**5.3**	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-05-05	BDC-05-05-081120	N	11/20/2008	0.2 U	0.2 U	2.5 U	**3**	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	**4.2**	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-05-05	BDC-05-05-090513	N	5/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**2**	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-091113	N	11/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.2**	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-100518	N	5/18/2010	1 U	1 U	5 UJ	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-101109	N	11/9/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	**1.1 J**	1 U	1 U	1 U	--	1 U	1 U
BDC-05-05	BDC-05-05-110502	N	5/2/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 UJ	**0.9**	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-05-05	BDC-05-05-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-04	BDC-05-04-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	**0.4**	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-05-04	BDC-05-04-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U
BDC-05-04	BDC-05-04-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-04	BDC-05-04-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.21**	--	--	--	--	0.20 U
BDC-05-04	BDC-05-04-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.48**
BDC-05-05	BDC-05-05-870204	N	2/4/1987	--	1 U	--	1 U	--	--	--	**5 J**	1 U	--	--	1 U	--	1 U	--	1 U	1 U	--	1 U	1 U	--	1 U	--	--	--	1 U	1 U
BDC-05-05	BDC-05-05-951025	N	10/25/1995	--	5 U	--	2 U	--	--	--	5 U	1 U	--	--	--	--	5 U	--	5 U	5 U	10 U	5 U	5 U	--	5 U	--	--	--	--	5 U
BDC-05-05	BDC-05-05-970519	N	5/19/1997	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-05-05	BDC-05-05-980608	N	6/8/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	**1.4 J**	1 U	--	--	--	1 U
BDC-05-05	BDC-05-05-991122	N	11/22/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-05-05	BDC-05-05-000531	N	5/31/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.33**	1.46 U	--	--	--	1 U
BDC-05-05	BDC-05-05-001206	N	12/6/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**2.01**	1.46 U	--	--	--	1 U
BDC-05-05	BDC-05-05-010611	N	6/11/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.87 J**	1.46 U	--	--	--	1 U
BDC-05-05	BDC-05-05-011203	N	12/3/2001	1.1 U	**1.8**	1 U	1 U	1 U	--	--	1 U	**1.7**	1 U	1 U	--	1 U	1 U	1 U	1 U	**3.8**	**8**	1 U	1 U	--	**1**	1.5 U	--	--	--	1 U
BDC-05-05	BDC-05-05-020604	N	6/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.6**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.4**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-030603	N	6/3/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.7**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-031119	N	11/19/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.5**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-5-040429	N	4/29/2004	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	**1.5**	1.0 U	--	--	5.0 U	1.0 U
BDC-05-05	BDC-05-05-041018	N	10/18/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.3**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-050510	N	5/10/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.4**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-051116	N	11/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.5**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.4**	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-061120	N	11/20/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.8**	0.2 U	--	0.2 U	0.2 U	1 U	**1.1**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-05-05	BDC-05-05-070521	N	5/21/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-071126	N	11/26/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-080522	N	5/22/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U	1 U	**0.8**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-05	BDC-05-05-081120	N	11/20/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U	1 U	**0.7**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-05	BDC-05-05-090513	N	5/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-091113	N	11/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-100518	N	5/18/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-101109	N	11/9/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.1 J**	1 UJ	2 U	--	5 U	1 U
BDC-05-05	BDC-05-05-110502	N	5/2/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U	1 U	**0.8**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-05	BDC-05-05-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.2**	--	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-05	BDC-05-05-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-05	BDC-05-05-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-06	BDC-05-06-870204	N	2/4/1987	--	1 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U	--	--	--	1 U	1 U	--	1 U	--	1 U	--	1 U	--	1 U	--	1 U	1 U	1 U	--	1 U
BDC-05-07	BDC-05-07-870311	N	3/11/1987	--	**105**	2.1 U	1.6 U	--	**11**	4.5 U	--	--	--	1.8 U	--	--	**7.1**	0.2 U	2.3 U	--	1.6 U	--	0.3 U	--	0.9 U	--	6.3 U	2.6 U	0.1 U	--	1.9 U
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	**18**	3 U	1 U	--	**3**	1 U	--	--	--	--	--	--	--	--	1 U	**7**	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	**85**	3 U	1 U	--	**17**	1 U	--	--	--	--	--	--	--	--	1 U	**42**	1 U	--	--	--	--	--	3 U	--	--	--	3 U
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	**7.69 J**	5 U	5 U	--	5 U	5 U	--	--	--	1 U	--	--	--	1 U	5 U	--	5 U	--	1 U	--	1 U	--	20 U	10 U	1 U	--	5 U
BDC-05-07	BDC-05-07-970519	N	5/19/1997	1 U	**8.7 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	1 U	1 U	1 U
BDC-05-07	BDC-05-07-980608	N	6/8/1998	1 U	**8.5 J**	1 U	1 U	--	**1.4 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-05-07	BDC-05-07-991122	N	11/22/1999	1 U	**8.6 J**	1 U	1 U	--	**1.6 J**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-000531	N	5/31/2000	1 U	**7.2**	1 U	1 U	--	**1.5**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
BDC-05-07	BDC-05-07-001206	N	12/6/2000	1 U	**11.49**	1 U	1 U	--	**1.67**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-010611	N	6/11/2001	1 U	**5.88 J**	1 U	1 U	--	**1.41 J**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-011203	N	12/3/2001	1 U	**8.4**	1 U	1 U	--	**3.3**	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-020604	N	6/4/2002	1 U	**7.8**	1 U	1 U	--	**1.6**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-021203	N	12/3/2002	1 U	**7.2**	1 U	1 U	--	**1.6**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-030603	N	6/3/2003	1 U	**8**	1 U	1 U	--	**1.9**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-031119	N	11/19/2003	1 U	**11**	1 U	1 U	--	**2.3**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-7-040429	N	4/29/2004	1.0 U	**7.6**	1.0 U	1.0 U	2.0 U	**1.6**	1.0 U	1.0 U	5.0 U	3.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-05-07	BDC-05-07-041018	N	10/18/2004	1 U	**7.4**	1 U	1 U	--	**2.1**	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-050510	N	5/10/2005	1 U	**6.2**	1 U	1 U	--	**1.6**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-051116	N	11/16/2005	1 U	**6.8**	1 U	1 U	--	**2.2**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-05	BDC-05-05-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--
BDC-05-05	BDC-05-05-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-05	BDC-05-05-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-05	BDC-05-05-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-05	BDC-05-05-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-05	BDC-05-05-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-06	BDC-05-06-870204	N	2/4/1987	--	--	1 U	1 U	5 U	5 U	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	--	1 U	--
BDC-05-07	BDC-05-07-870311	N	3/11/1987	--	--	3.6 U	11.6 U	--	--	1.7 U	--	--	1.3 U	--	1.9 U	4.2 U	2 U	1.7 U	1.3 U	4.4 U	2.5 U	3.2 U	--	1.7 U	--	1.6 U	--
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	**7**	3 U	--	3 U	--
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	--	3 U	5 U	--	--	1 U	--	--	1 U	--	1 U	1 U	1 U	1 U	3 U	3 U	1 U	1 U	**41**	3 U	--	3 U	--
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
BDC-05-07	BDC-05-07-970519	N	5/19/1997	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2 J**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-980608	N	6/8/1998	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.9 J**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-991122	N	11/22/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**2.2 J**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-000531	N	5/31/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**3.4**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-001206	N	12/6/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**4.3**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-010611	N	6/11/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**4.79 J**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-011203	N	12/3/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**9.9**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-020604	N	6/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.5**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.2**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-030603	N	6/3/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.5**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-031119	N	11/19/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**8.2**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-7-040429	N	4/29/2004	1.0 U	1.0 U	5.0 U	5.0 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**6.4**	1.0 U	--	1.0 U	1.0 U
BDC-05-07	BDC-05-07-041018	N	10/18/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**12**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-050510	N	5/10/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.5**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-051116	N	11/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-05	BDC-05-05-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.9**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	**1.1**	--	--	--	--	0.5 U
BDC-05-05	BDC-05-05-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.9**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--	--	**1.1**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.9**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.8**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**1**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.9**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	**1.5**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--	--	**1.0**	--	--	--	--	0.2 U
BDC-05-05	BDC-05-05-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.32**	--	--	--	--	--	**0.54**	--	--	--	--	0.20 U
BDC-05-05	BDC-05-05-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.69**	--	--	--	--	--	**1.17**	--	--	--	--	0.20 U
BDC-05-05	BDC-05-05-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.41**	--	--	--	--	--	**0.70**	--	--	--	--	0.20 U
BDC-05-05	BDC-05-05-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.66**	--	--	--	--	--	**1.04**	--	--	--	--	0.20 U
BDC-05-06	BDC-05-06-870204	N	2/4/1987	--	1 U	--	1 U	--	--	--	**5 J**	1 U	--	--	1 U	--	1 U	--	1 U	1 U	--	1 U	1 U	--	1 U	--	--	--	1 U	1 U
BDC-05-07	BDC-05-07-870311	N	3/11/1987	--	2.1 U	--	1.8 U	--	--	--	3.3 U	3.2 U	--	--	--	--	2.7 U	--	**10**	1.5 U	2.4 U	**24**	1.7 U	--	**25**	5 U	--	**89**	5.8 U	3.7 U
BDC-05-07	BDC-05-07-880203	N	2/3/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**1**	1 U	1 U	**1**	3 U	--	**11**	--	--	--	1 U	1 U
BDC-05-07	BDC-05-07-DUP-880203	FD	2/3/1988	--	1 U	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	**9**	1 U	1 U	1 U	3 U	--	**36**	--	--	--	1 U	1 U
BDC-05-07	BDC-05-07-951031	N	10/31/1995	--	5 U	--	2 U	--	--	--	5 U	1 U	--	--	--	--	5 U	--	5 U	5 U	10 U	5 U	5 U	--	**12.83**	--	--	--	--	5 U
BDC-05-07	BDC-05-07-970519	N	5/19/1997	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**4.6 J**	1 U	2 U	1 U	1 U	--	16.6 U	1 U	--	--	--	1 U
BDC-05-07	BDC-05-07-980608	N	6/8/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**5.9 J**	1 U	2 U	1 U	1 U	--	**15.2**	1 U	--	--	--	1 U
BDC-05-07	BDC-05-07-991122	N	11/22/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**10.1**	1 U	1 U	1 U	1 U	--	**27.1**	1.46 U	--	--	--	1 U
BDC-05-07	BDC-05-07-000531	N	5/31/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**9.3**	1 U	1 U	1 U	1 U	--	**26.7**	1.46 U	--	--	--	1 U
BDC-05-07	BDC-05-07-001206	N	12/6/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**16.26**	1 U	1 U	1 U	1 U	--	**37.95**	1.46 U	--	--	--	1 U
BDC-05-07	BDC-05-07-010611	N	6/11/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**4.91 J**	1 U	1 U	1 U	1 U	--	**25.82**	1.46 U	--	--	--	1 U
BDC-05-07	BDC-05-07-011203	N	12/3/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**5.6**	**1.4**	**2.7**	1 U	1 U	--	**30**	1.5 U	--	--	--	1 U
BDC-05-07	BDC-05-07-020604	N	6/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U	5 U	**28**	1 U	**2.1**	--	5 U	1 U
BDC-05-07	BDC-05-07-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**12**	1 U	--	1 U	1 U	5 U	**26**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-030603	N	6/3/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**15**	1 U	--	1 U	1 U	5 U	**29**	1 U	**2.2**	--	5 U	1 U
BDC-05-07	BDC-05-07-031119	N	11/19/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U	5 U	**41**	1 U	**2.9**	--	5 U	1 U
BDC-05-07	BDC-05-7-040429	N	4/29/2004	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**23**	1.0 U	--	1.0 U	1.0 U	5.0 U	**31**	1.0 U	--	--	5.0 U	1.0 U
BDC-05-07	BDC-05-07-041018	N	10/18/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**27**	1 U	--	1 U	1 U	5 U	**37**	1 U	**3.6**	--	5 U	1 U
BDC-05-07	BDC-05-07-050510	N	5/10/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**25**	1 U	--	1 U	1 U	5 U	**31**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-051116	N	11/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**31**	1 U	--	1 U	1 U	5 U	**34**	1 U	**2.4**	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-060515	N	5/15/2006	1 U	**4.1**	1 U	1 U	--	**1.7**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-061120	N	11/20/2006	1 U	**5.4**	1 U	1 U	--	**1.7**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-070521	N	5/21/2007	1 U	**4.7**	1 U	1 U	--	**1.9**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-071126	N	11/26/2007	1 U	1 U	1 U	1 U	--	**1.8**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-080522	N	5/22/2008	0.2 U	**6**	0.2 U	0.2 U	--	**1.6**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-07	BDC-05-07-081023	N	10/23/2008	0.2 U	**5.7**	0.2 U	0.2 U	--	**1.9**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-07	BDC-05-07-081120	N	11/20/2008	0.6 U	**3**	0.6 U	0.6 U	--	**1**	0.6 U	0.6 U	1.5 U	1.5 U	1.5 U	0.6 U	1.5 U	--	0.6 U	0.6 U	--	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	7.5 U	3 U	--	0.6 U	7.5 U
BDC-05-07	BDC-05-07-081216	N	12/16/2008	1 U	**4.6**	1 U	1 U	--	**1.5**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-090116	N	1/16/2009	1 U	**4.4**	1 U	1 U	--	**1.4**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	5 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-090211	N	2/11/2009	1 U	**5.2**	1 U	1 U	--	**1.7**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-090309	N	3/9/2009	1 U	1 U	1 U	1 U	--	**1.7**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-090416	N	4/16/2009	1 U	**3.4**	1 U	1 U	--	**1.7**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-090513	N	5/13/2009	1 U	**1.9**	1 U	1 U	--	**1.1**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-090816	N	8/16/2009	1 U	**1.2**	1 U	1 U	--	**1.3**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-091113	N	11/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-100216	N	2/16/2010	1 U	1 U	1 U	1 U	--	**2.3**	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-05-07	BDC-05-07-100518	N	5/18/2010	1 U	1 U	1 U	1 U	--	**3.2**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-100817	N	8/17/2010	1 U	1 U	1 U	1 U	--	**1.4**	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-101109	N	11/9/2010	1 U	1 U	1 U	1 U	--	**2 J**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-110215	N	2/15/2011	1 U	1 U	1 U	1 U	--	**2**	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-07	BDC-05-07-110502	N	5/2/2011	0.2 U	**0.3**	0.2 U	0.2 U	--	**2.4**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-05-07	BDC-05-07-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-061120	N	11/20/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-070521	N	5/21/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-071126	N	11/26/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-080522	N	5/22/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**9.2**	0.2 U	--	0.2 U	0.2 U
BDC-05-07	BDC-05-07-081023	N	10/23/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**14**	0.2 U	--	0.2 U	0.2 U
BDC-05-07	BDC-05-07-081120	N	11/20/2008	0.6 U	0.6 U	7.5 U	9 U	15 U	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1.5 U	0.6 U	0.6 U	0.6 U	0.6 U	**0.6**	0.6 U	**5.2**	0.6 U	--	0.6 U	0.6 U
BDC-05-07	BDC-05-07-081216	N	12/16/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.2**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-090116	N	1/16/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.4**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-090211	N	2/11/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.9**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-090309	N	3/9/2009	1 U	1 U	5 U	**10**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**8.4**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-090416	N	4/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-090513	N	5/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.5**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-090816	N	8/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-091113	N	11/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.6**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-100216	N	2/16/2010	1 U	1 U	5 U	**25**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**28**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-100518	N	5/18/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**41**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-100817	N	8/17/2010	1 U	1 U	5 UJ	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**19**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-101109	N	11/9/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	**20 J**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-110215	N	2/15/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U
BDC-05-07	BDC-05-07-110502	N	5/2/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.5 U	**17**	0.2 U	--	0.2 U	0.2 U
BDC-05-07	BDC-05-07-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**39**	--	--	--	--
BDC-05-07	BDC-05-07-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**23**	--	--	--	--
BDC-05-07	BDC-05-07-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**24**	--	--	--	--
BDC-05-07	BDC-05-07-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.6**	--	--	--	--
BDC-05-07	BDC-05-07-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.4**	--	--	--	--
BDC-05-07	BDC-05-07-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.5**	--	--	--	--
BDC-05-07	BDC-05-07-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.1**	--	--	--	--
BDC-05-07	BDC-05-07-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-07	BDC-05-07-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-05-07	BDC-05-07-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-07	BDC-05-07-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-07	BDC-05-07-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-07	BDC-05-07-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-07	BDC-05-07-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.30**	--	--	--	--
BDC-05-07	BDC-05-07-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.01**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**29**	1 U	--	1 U	1 U	5 U	**23**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-061120	N	11/20/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**24**	1 U	--	1 U	1 U	5 U	**29**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-070521	N	5/21/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**30**	1 U	--	1 U	1 U	5 U	**22**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-071126	N	11/26/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**28**	1 U	--	1 U	1 U	5 U	**25**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-080522	N	5/22/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**33**	0.2 U	--	0.2 U	0.2 U	1 U	**32**	0.2 U	**1**	--	1 U	0.2 U
BDC-05-07	BDC-05-07-081023	N	10/23/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**22**	0.2 U	--	**0.2**	0.2 U	1 U	**24**	0.2 U	**0.9**	--	1 U	0.2 U
BDC-05-07	BDC-05-07-081120	N	11/20/2008	--	0.6 U	0.6 U	1.5 U	0.6 U	1.2 U	3 U	**1.9**	1.5 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	**17**	0.6 U	--	0.6 U	0.6 U	3 U	**17**	0.6 U	**0.6**	--	3 U	0.6 U
BDC-05-07	BDC-05-07-081216	N	12/16/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**16**	1 U	--	1 U	1 U	5 U	**25**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-090116	N	1/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U	5 U	**23**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-090211	N	2/11/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**23**	1 U	--	1 U	1 U	5 U	**28**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-090309	N	3/9/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U	5 U	**21**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-090416	N	4/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U	5 U	**21**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-090513	N	5/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U	5 U	**13**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-090816	N	8/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U	5 U	**12**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-091113	N	11/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.5**	1 U	--	1 U	1 U	5 U	**5.3**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-100216	N	2/16/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.4**	1 U	--	1 U	1 U	5 U	**6.9**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-100518	N	5/18/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 UJ	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.8**	1 U	--	1 U	1 U	5 U	**9.2**	1 UJ	2 UJ	--	5 U	**1.2**
BDC-05-07	BDC-05-07-100817	N	8/17/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.8**	1 U	--	1 U	1 U	5 U	**7.8**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-101109	N	11/9/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**9.4 J**	1 UJ	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-110215	N	2/15/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**8.7**	1 U	2 U	--	5 U	1 U
BDC-05-07	BDC-05-07-110502	N	5/2/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**5.2**	0.2 U	--	**0.2**	0.2 U	1 U	**11**	0.2 U	**0.4**	--	1 U	0.2 U
BDC-05-07	BDC-05-07-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--	--	**6.9**	--	--	--	--	1 U
BDC-05-07	BDC-05-07-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-07	BDC-05-07-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**0.8**
BDC-05-07	BDC-05-07-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**0.5**
BDC-05-07	BDC-05-07-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.6**
BDC-05-07	BDC-05-07-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**1.4**
BDC-05-07	BDC-05-07-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**13**
BDC-05-07	BDC-05-07-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**5.3**
BDC-05-07	BDC-05-07-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	0.2 U	--	--	--	--	**1.9**
BDC-05-07	BDC-05-07-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--	--	0.2 U	--	--	--	--	**3.2**
BDC-05-07	BDC-05-07-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-07	BDC-05-07-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	**0.3**	--	--	--	--	**0.3**
BDC-05-07	BDC-05-07-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-07	BDC-05-07-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U
BDC-05-07	BDC-05-07-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-07	BDC-05-07-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-081023	N	10/23/2008	0.2 U	**0.7**	0.2 U	0.2 U	--	**0.6**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-08	BDC-05-08-081120	N	11/20/2008	0.2 U	**0.6**	0.2 U	0.2 U	--	**0.4**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-05-08	BDC-05-08-081216	N	12/16/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-090116	N	1/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-090211	N	2/11/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-090309	N	3/9/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-090416	N	4/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-090513	N	5/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-090816	N	8/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-091113	N	11/13/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-100216	N	2/16/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-05-08	BDC-05-08-100518	N	5/18/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-100817	N	8/17/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-101109	N	11/9/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-110215	N	2/15/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-05-08	BDC-05-08-110502	N	5/2/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-05-08	BDC-05-08-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-08	BDC-05-08-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.90**	--	--	--	--
BDC-05-07	BDC-05-07-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.88**	--	--	--	--
BDC-05-08	BDC-05-08-081023	N	10/23/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**3.5**	0.2 U	--	0.2 U	0.2 U
BDC-05-08	BDC-05-08-081120	N	11/20/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**4.2**	0.2 U	--	0.2 U	0.2 U
BDC-05-08	BDC-05-08-081216	N	12/16/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.3**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-090116	N	1/16/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.6**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-090211	N	2/11/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.9**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-090309	N	3/9/2009	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.5**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-090416	N	4/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.4**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-090513	N	5/13/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-090816	N	8/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.5**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-091113	N	11/13/2009	1 U	1 U	5 U	10 UJ	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.1**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-100216	N	2/16/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-100518	N	5/18/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-100817	N	8/17/2010	1 U	1 U	5 UJ	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-101109	N	11/9/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 UJ	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	**3.5 J**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-110215	N	2/15/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U
BDC-05-08	BDC-05-08-110502	N	5/2/2011	0.2 U	0.2 U	5 U	**11**	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.5 U	**2.2**	0.2 U	--	0.2 U	0.2 U
BDC-05-08	BDC-05-08-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.4**	--	--	--	--
BDC-05-08	BDC-05-08-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.7**	--	--	--	--
BDC-05-08	BDC-05-08-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-05-08	BDC-05-08-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-08	BDC-05-08-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.3**	--	--	--	--
BDC-05-08	BDC-05-08-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.9**	--	--	--	--
BDC-05-08	BDC-05-08-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.8**	--	--	--	--
BDC-05-08	BDC-05-08-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-08	BDC-05-08-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-08	BDC-05-08-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-08	BDC-05-08-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-08	BDC-05-08-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-08	BDC-05-08-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-08	BDC-05-08-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-08	BDC-05-08-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-08	BDC-05-08-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-08	BDC-05-08-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-09	BDC-05-09-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**22**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-07	BDC-05-07-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.93**
BDC-05-07	BDC-05-07-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.47**
BDC-05-08	BDC-05-08-081023	N	10/23/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.1**	**3.7**	--	0.2 U	0.2 U	1 U	**3.7**	0.2 U	**0.2**	--	1 U	0.2 U
BDC-05-08	BDC-05-08-081120	N	11/20/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.1**	**1.7**	--	0.2 U	0.2 U	1 U	**3.4**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-08	BDC-05-08-081216	N	12/16/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**4.3**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-090116	N	1/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U	5 U	**4.2**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-090211	N	2/11/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**3.2**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-090309	N	3/9/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2.7**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-090416	N	4/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2.3**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-090513	N	5/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.6**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-090816	N	8/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2.1**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-091113	N	11/13/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-100216	N	2/16/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-100518	N	5/18/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 UJ	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 UJ	2 UJ	--	5 U	1 U
BDC-05-08	BDC-05-08-100817	N	8/17/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-101109	N	11/9/2010	--	1 U	1 U	5 U	1 U	2 U	1 UJ	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 UJ	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-110215	N	2/15/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-05-08	BDC-05-08-110502	N	5/2/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	0.2 U
BDC-05-08	BDC-05-08-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-05-08	BDC-05-08-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-08	BDC-05-08-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	0.5 U
BDC-05-08	BDC-05-08-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-08	BDC-05-08-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.8**
BDC-05-08	BDC-05-08-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.8**
BDC-05-08	BDC-05-08-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**16**
BDC-05-08	BDC-05-08-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.3**
BDC-05-08	BDC-05-08-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-08	BDC-05-08-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**
BDC-05-08	BDC-05-08-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-08	BDC-05-08-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-08	BDC-05-08-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-08	BDC-05-08-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-08	BDC-05-08-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-08	BDC-05-08-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-08	BDC-05-08-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-09	BDC-05-09-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**30**	--	--	--	--	--	**20**	--	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-09	BDC-05-09-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-DUP-151028	FD	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-09	BDC-05-09-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-DUP-120506	FD	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-DUP-141110	FD	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-09	BDC-05-09-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**44**	--	--	--	--
BDC-05-09	BDC-05-09-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**250**	--	--	--	--
BDC-05-09	BDC-05-09-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**24**	--	--	--	--
BDC-05-09	BDC-05-09-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-05-09	BDC-05-09-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.2**	--	--	--	--
BDC-05-09	BDC-05-09-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-09	BDC-05-09-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-05-09	BDC-05-09-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-09	BDC-05-09-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-09	BDC-05-09-DUP-151028	FD	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-09	BDC-05-09-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-09	BDC-05-09-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-09	BDC-05-09-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-09	BDC-05-09-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-09	BDC-05-09-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.90**	--	--	--	--
BDC-05-09	BDC-05-09-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-09	BDC-05-09-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.37**	--	--	--	--
BDC-05-09	BDC-05-09-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.21**	--	--	--	--
BDC-05-10	BDC-05-10-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
BDC-05-10	BDC-05-10-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-05-10	BDC-05-10-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**120**	--	--	--	--
BDC-05-10	BDC-05-10-DUP-120506	FD	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**120**	--	--	--	--
BDC-05-10	BDC-05-10-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.4**	--	--	--	--
BDC-05-10	BDC-05-10-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-10	BDC-05-10-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-10	BDC-05-10-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-10	BDC-05-10-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-10	BDC-05-10-DUP-141110	FD	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-10	BDC-05-10-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-10	BDC-05-10-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-10	BDC-05-10-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-10	BDC-05-10-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-10	BDC-05-10-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-10	BDC-05-10-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-10	BDC-05-10-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.43**	--	--	--	--
BDC-05-10	BDC-05-10-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-09	BDC-05-09-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**37**	--	--	--	--	--	**56**	--	--	--	--	**1.3**
BDC-05-09	BDC-05-09-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3**	--	--	--	--	--	**1.1**	--	--	--	--	**3.9**
BDC-05-09	BDC-05-09-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**20**
BDC-05-09	BDC-05-09-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.7**
BDC-05-09	BDC-05-09-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**14**
BDC-05-09	BDC-05-09-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1**
BDC-05-09	BDC-05-09-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.5**
BDC-05-09	BDC-05-09-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**8.3**
BDC-05-09	BDC-05-09-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.1**
BDC-05-09	BDC-05-09-DUP-151028	FD	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.1**
BDC-05-09	BDC-05-09-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.8**
BDC-05-09	BDC-05-09-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-09	BDC-05-09-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.8**
BDC-05-09	BDC-05-09-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**
BDC-05-09	BDC-05-09-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.33**	--	--	--	--	**3.32**
BDC-05-09	BDC-05-09-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.98**
BDC-05-09	BDC-05-09-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.21**	--	--	--	--	**2.35**
BDC-05-09	BDC-05-09-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**1.62**
BDC-05-10	BDC-05-10-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**39**	--	--	--	--	--	**26**	--	--	--	--	1 U
BDC-05-10	BDC-05-10-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**22**	--	--	--	--	--	**27**	--	--	--	--	1 U
BDC-05-10	BDC-05-10-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**5.4**
BDC-05-10	BDC-05-10-DUP-120506	FD	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**5.2**
BDC-05-10	BDC-05-10-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**49**
BDC-05-10	BDC-05-10-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**11**
BDC-05-10	BDC-05-10-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**15**
BDC-05-10	BDC-05-10-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**5.1**
BDC-05-10	BDC-05-10-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.9**
BDC-05-10	BDC-05-10-DUP-141110	FD	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.9**
BDC-05-10	BDC-05-10-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.9**
BDC-05-10	BDC-05-10-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-10	BDC-05-10-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.8**
BDC-05-10	BDC-05-10-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.8**
BDC-05-10	BDC-05-10-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.8**
BDC-05-10	BDC-05-10-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.6**
BDC-05-10	BDC-05-10-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U
BDC-05-10	BDC-05-10-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00 U	--	--	--	--	--	2.00 U	--	--	--	--	2.00 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-10	BDC-05-10-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-10	BDC-05-10-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-11	BDC-05-11-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-10	BDC-05-10-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.16**	--	--	--	--
BDC-05-10	BDC-05-10-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.58**	--	--	--	--
BDC-05-11	BDC-05-11-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.8**	--	--	--	--
BDC-05-11	BDC-05-11-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
BDC-05-11	BDC-05-11-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**44**	--	--	--	--
BDC-05-11	BDC-05-11-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.1**	--	--	--	--
BDC-05-11	BDC-05-11-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-11	BDC-05-11-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-11	BDC-05-11-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-11	BDC-05-11-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-11	BDC-05-11-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-11	BDC-05-11-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-11	BDC-05-11-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-05-12-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--
BDC-05-12	BDC-05-12-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--
BDC-05-12	BDC-05-12-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**53**	--	--	--	--
BDC-05-12	BDC-05-12-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**39**	--	--	--	--
BDC-05-12	BDC-05-12-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.5**	--	--	--	--
BDC-05-12	BDC-05-12-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.9**	--	--	--	--
BDC-05-12	BDC-05-12-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-05-12	BDC-05-12-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-12	BDC-05-12-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--
BDC-05-12	BDC-05-12-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--
BDC-05-12	BDC-05-12-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-12	BDC-05-12-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-12	BDC-05-12-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-12	BDC-05-12-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-12	BDC-05-12-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-10	BDC-05-10-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**2.01**
BDC-05-10	BDC-05-10-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.92**
BDC-05-11	BDC-05-11-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--	--	**19**	--	--	--	--	1 U
BDC-05-11	BDC-05-11-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.6**	--	--	--	--	--	**20**	--	--	--	--	1 U
BDC-05-11	BDC-05-11-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--	--	**0.5**	--	--	--	--	**7.2**
BDC-05-11	BDC-05-11-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**5.7**
BDC-05-11	BDC-05-11-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.9**
BDC-05-11	BDC-05-11-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.9**
BDC-05-11	BDC-05-11-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2**
BDC-05-11	BDC-05-11-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.5**
BDC-05-11	BDC-05-11-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.5**
BDC-05-11	BDC-05-11-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.5**
BDC-05-11	BDC-05-11-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.4**
BDC-05-11	BDC-05-11-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-11	BDC-05-11-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.8**
BDC-05-11	BDC-05-11-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-11	BDC-05-11-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**1.12**
BDC-05-11	BDC-05-11-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.43**
BDC-05-11	BDC-05-11-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.41**
BDC-05-11	BDC-05-11-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.29**
BDC-05-12	BDC-05-12-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**15**	--	--	--	--	--	**18**	--	--	--	--	1 U
BDC-05-12	BDC-05-12-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--	--	**17**	--	--	--	--	1 U
BDC-05-12	BDC-05-12-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	0.4 U	--	--	--	--	**1.8**
BDC-05-12	BDC-05-12-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.4**
BDC-05-12	BDC-05-12-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.3**
BDC-05-12	BDC-05-12-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**5.4**
BDC-05-12	BDC-05-12-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**4.4**
BDC-05-12	BDC-05-12-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**5**
BDC-05-12	BDC-05-12-130829	N	8/29/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	2 U
BDC-05-12	BDC-05-12-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	2 U
BDC-05-12	BDC-05-12-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-05-12	BDC-05-12-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-05-12	BDC-05-12-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.1**
BDC-05-12	BDC-05-12-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.7**
BDC-05-12	BDC-05-12-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.8**
BDC-05-12	BDC-05-12-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.4**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-12	BDC-05-12-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-DUP-150721	FD	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-180502	FD	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-181106	FD	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-05-12-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-191106	FD	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-12	BDC-DUP3-190502	FD	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-13	BDC-05-13-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-12	BDC-05-12-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-DUP-150721	FD	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-05-12-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-12	BDC-DUP3-180502	FD	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-05-12-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-DUP3-181106	FD	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-05-12-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-05-12-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-05-12-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-DUP3-191106	FD	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-12	BDC-DUP3-190502	FD	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-13	BDC-05-13-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.6**	--	--	--	--
BDC-05-13	BDC-05-13-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**39**	--	--	--	--
BDC-05-13	BDC-05-13-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**13**	--	--	--	--
BDC-05-13	BDC-05-13-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-13	BDC-05-13-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-13	BDC-05-13-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-13	BDC-05-13-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-13	BDC-05-13-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-13	BDC-05-13-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-13	BDC-05-13-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-13	BDC-05-13-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-13	BDC-05-13-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-13	BDC-05-13-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-13	BDC-05-13-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-13	BDC-05-13-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-13	BDC-05-13-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-13	BDC-05-13-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-12	BDC-05-12-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-12	BDC-05-12-DUP-150721	FD	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-12	BDC-05-12-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-12	BDC-05-12-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.8**
BDC-05-12	BDC-05-12-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-12	BDC-05-12-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-12	BDC-05-12-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-12	BDC-05-12-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-12	BDC-05-12-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-12	BDC-05-12-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-12	BDC-05-12-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.2**
BDC-05-12	BDC-DUP3-180502	FD	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.45**
BDC-05-12	BDC-05-12-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.46**
BDC-05-12	BDC-DUP3-181106	FD	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-12	BDC-05-12-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-12	BDC-05-12-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-12	BDC-05-12-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-12	BDC-DUP3-191106	FD	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-12	BDC-DUP3-190502	FD	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-13	BDC-05-13-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.2**	--	--	--	--	--	**6.6**	--	--	--	--	1 U
BDC-05-13	BDC-05-13-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.2**	--	--	--	--	1 U
BDC-05-13	BDC-05-13-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.9**
BDC-05-13	BDC-05-13-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.3**
BDC-05-13	BDC-05-13-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**
BDC-05-13	BDC-05-13-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.1**
BDC-05-13	BDC-05-13-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.6**
BDC-05-13	BDC-05-13-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.5**
BDC-05-13	BDC-05-13-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.9**
BDC-05-13	BDC-05-13-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.1**
BDC-05-13	BDC-05-13-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2**
BDC-05-13	BDC-05-13-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1**
BDC-05-13	BDC-05-13-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.1**
BDC-05-13	BDC-05-13-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.1**
BDC-05-13	BDC-05-13-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.60**
BDC-05-13	BDC-05-13-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.62**
BDC-05-13	BDC-05-13-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.41**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-13	BDC-05-13-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-14	BDC-05-14-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-15	BDC-05-15-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-13	BDC-05-13-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-14	BDC-05-14-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
BDC-05-14	BDC-05-14-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**13**	--	--	--	--
BDC-05-14	BDC-05-14-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3**	--	--	--	--
BDC-05-14	BDC-05-14-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-05-14	BDC-05-14-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-14	BDC-05-14-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-14	BDC-05-14-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-14	BDC-05-14-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-14	BDC-05-14-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-14	BDC-05-14-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-14	BDC-05-14-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-14	BDC-05-14-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-14	BDC-05-14-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-14	BDC-05-14-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-14	BDC-05-14-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-14	BDC-05-14-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-14	BDC-05-14-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-14	BDC-05-14-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-15	BDC-05-15-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**58**	--	--	--	--
BDC-05-15	BDC-05-15-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**15**	--	--	--	--
BDC-05-15	BDC-05-15-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**49**	--	--	--	--
BDC-05-15	BDC-05-15-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--
BDC-05-15	BDC-05-15-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-15	BDC-05-15-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-15	BDC-05-15-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-15	BDC-05-15-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-15	BDC-05-15-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-15	BDC-05-15-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-13	BDC-05-13-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.41**
BDC-05-14	BDC-05-14-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--	--	**6.8**	--	--	--	--	1 U
BDC-05-14	BDC-05-14-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.5**	--	--	--	--	--	**6.7**	--	--	--	--	1 U
BDC-05-14	BDC-05-14-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**1.1**
BDC-05-14	BDC-05-14-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2**
BDC-05-14	BDC-05-14-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-14	BDC-05-14-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**
BDC-05-14	BDC-05-14-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.5**
BDC-05-14	BDC-05-14-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**5.1**
BDC-05-14	BDC-05-14-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.6**
BDC-05-14	BDC-05-14-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.4**
BDC-05-14	BDC-05-14-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-14	BDC-05-14-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-14	BDC-05-14-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1**
BDC-05-14	BDC-05-14-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-14	BDC-05-14-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.33**
BDC-05-14	BDC-05-14-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.42**
BDC-05-14	BDC-05-14-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.30**
BDC-05-14	BDC-05-14-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.29**
BDC-05-15	BDC-05-15-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.6**	--	--	--	--	--	**28**	--	--	--	--	1 U
BDC-05-15	BDC-05-15-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.8**	--	--	--	--	--	**9.8**	--	--	--	--	1 U
BDC-05-15	BDC-05-15-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**6.3**
BDC-05-15	BDC-05-15-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**7.5**
BDC-05-15	BDC-05-15-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**16**
BDC-05-15	BDC-05-15-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**4.9**
BDC-05-15	BDC-05-15-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**8.6**
BDC-05-15	BDC-05-15-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-15	BDC-05-15-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.9**
BDC-05-15	BDC-05-15-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-15	BDC-05-15-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.1**
BDC-05-15	BDC-05-15-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-15	BDC-05-15-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-15	BDC-05-15-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-15	BDC-05-15-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.20**
BDC-05-15	BDC-05-15-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.22**
BDC-05-15	BDC-05-15-190503	N	5/3/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.21**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-15	BDC-05-15-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-DUP-120905	FD	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-DUP-130225	FD	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-0516-DUP-140211	FD	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-16	BDC-05-16-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-15	BDC-05-15-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-16	BDC-05-16-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--
BDC-05-16	BDC-05-16-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**37**	--	--	--	--
BDC-05-16	BDC-05-16-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**46**	--	--	--	--
BDC-05-16	BDC-05-16-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.7**	--	--	--	--
BDC-05-16	BDC-05-16-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-05-16	BDC-05-16-DUP-120905	FD	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-05-16	BDC-05-16-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-DUP-130225	FD	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-16	BDC-05-16-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-0516-DUP-140211	FD	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-16	BDC-05-16-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-16	BDC-05-16-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-16	BDC-05-16-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-16	BDC-05-16-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-16	BDC-05-16-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-17	BDC-05-17-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**34**	--	--	--	--
BDC-05-17	BDC-05-17-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.1**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-15	BDC-05-15-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.25**
BDC-05-16	BDC-05-16-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.5**	--	--	--	--	--	**17**	--	--	--	--	1 U
BDC-05-16	BDC-05-16-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.6**	--	--	--	--	--	**2.8**	--	--	--	--	1 U
BDC-05-16	BDC-05-16-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**7.4**
BDC-05-16	BDC-05-16-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**24**
BDC-05-16	BDC-05-16-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	0.4 U	--	--	--	--	**8.1**
BDC-05-16	BDC-05-16-DUP-120905	FD	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	0.4 U	--	--	--	--	**7.9**
BDC-05-16	BDC-05-16-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**4.9**
BDC-05-16	BDC-05-16-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**13**
BDC-05-16	BDC-05-16-DUP-130225	FD	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**13**
BDC-05-16	BDC-05-16-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**7.7**
BDC-05-16	BDC-05-16-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**4**
BDC-05-16	BDC-05-16-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**4.3**
BDC-05-16	BDC-05-16-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.1**
BDC-05-16	BDC-0516-DUP-140211	FD	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.2**
BDC-05-16	BDC-05-16-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.3**	--	--	--	--	**4.9**
BDC-05-16	BDC-05-16-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.4**
BDC-05-16	BDC-05-16-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**4.6**
BDC-05-16	BDC-05-16-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.9**
BDC-05-16	BDC-05-16-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.3**
BDC-05-16	BDC-05-16-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.7**
BDC-05-16	BDC-05-16-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.8**
BDC-05-16	BDC-05-16-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.7**
BDC-05-16	BDC-05-16-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-16	BDC-05-16-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-16	BDC-05-16-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.6**
BDC-05-16	BDC-05-16-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.8**
BDC-05-16	BDC-05-16-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-16	BDC-05-16-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-16	BDC-05-16-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-05-16	BDC-05-16-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.44**
BDC-05-16	BDC-05-16-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.54**
BDC-05-16	BDC-05-16-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.49**
BDC-05-16	BDC-05-16-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.51**
BDC-05-17	BDC-05-17-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--	--	**22**	--	--	--	--	1 U
BDC-05-17	BDC-05-17-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.2**	--	--	--	--	--	**4.8**	--	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-17	BDC-05-17-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-DUP-141111	FD	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-17	BDC-05-17-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-17	BDC-05-17-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.3**	--	--	--	--
BDC-05-17	BDC-05-17-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-05-17	BDC-05-17-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-17	BDC-05-17-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-05-17	BDC-05-17-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-17	BDC-05-17-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-17	BDC-05-17-DUP-141111	FD	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-17	BDC-05-17-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-17	BDC-05-17-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-17	BDC-05-17-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-17	BDC-05-17-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-17	BDC-05-17-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-17	BDC-05-17-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-17	BDC-05-17-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-17	BDC-05-17-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-17	BDC-05-17-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-17	BDC-05-17-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-18	BDC-05-18-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.6**	--	--	--	--
BDC-05-18	BDC-05-18-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.6**	--	--	--	--
BDC-05-18	BDC-05-18-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
BDC-05-18	BDC-05-18-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.6**	--	--	--	--
BDC-05-18	BDC-05-18-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--
BDC-05-18	BDC-05-18-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--
BDC-05-18	BDC-05-18-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.7**	--	--	--	--
BDC-05-18	BDC-05-18-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.1**	--	--	--	--
BDC-05-18	BDC-05-18-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.4**	--	--	--	--
BDC-05-18	BDC-05-18-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--
BDC-05-18	BDC-05-18-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.4**	--	--	--	--
BDC-05-18	BDC-05-18-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.4**	--	--	--	--
BDC-05-18	BDC-05-18-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-05-18	BDC-05-18-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-05-18	BDC-05-18-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--
BDC-05-18	BDC-05-18-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-05-18	BDC-05-18-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--
BDC-05-18	BDC-05-18-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.4**	--	--	--	--
BDC-05-18	BDC-05-18-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-17	BDC-05-17-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**5.6**
BDC-05-17	BDC-05-17-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**5.4**
BDC-05-17	BDC-05-17-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**5.1**
BDC-05-17	BDC-05-17-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**4**
BDC-05-17	BDC-05-17-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.2**
BDC-05-17	BDC-05-17-141111	N	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.7**
BDC-05-17	BDC-05-17-DUP-141111	FD	11/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.5**
BDC-05-17	BDC-05-17-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.5**
BDC-05-17	BDC-05-17-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.6**
BDC-05-17	BDC-05-17-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1**
BDC-05-17	BDC-05-17-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-17	BDC-05-17-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-17	BDC-05-17-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.8**
BDC-05-17	BDC-05-17-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.59**
BDC-05-17	BDC-05-17-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.64**
BDC-05-17	BDC-05-17-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.58**
BDC-05-17	BDC-05-17-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.54**
BDC-05-18	BDC-05-18-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--	--	**5**	--	--	--	--	1 U
BDC-05-18	BDC-05-18-111102	N	11/2/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--	--	**4**	--	--	--	--	1 U
BDC-05-18	BDC-05-18-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--	--	**3.7**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--	--	**4**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--	--	**3.1**	--	--	--	--	**0.2**
BDC-05-18	BDC-05-18-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--	--	**4.3**	--	--	--	--	0.5 U
BDC-05-18	BDC-05-18-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--	--	**4.6**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.1**	--	--	--	--	--	**5.2**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.2**	--	--	--	--	--	**3.7**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	**1.8**	--	--	--	--	**0.2**
BDC-05-18	BDC-05-18-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--	--	**2.1**	--	--	--	--	**0.3**
BDC-05-18	BDC-05-18-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--	--	**2.4**	--	--	--	--	**0.3**
BDC-05-18	BDC-05-18-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--	--	**0.9**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**1.1**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--	--	**1.1**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	**2**	--	--	--	--	**0.3**
BDC-05-18	BDC-05-18-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**1**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--	--	**1.3**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.2**	--	--	--	--	--	**2.9**	--	--	--	--	0.2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-18	BDC-05-18-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-18	BDC-05-18-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-DUP-120219	FD	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-DUP-160126	FD	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-DUP2-160809	FD	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-18	BDC-05-18-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-05-18	BDC-05-18-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.6**	--	--	--	--
BDC-05-18	BDC-05-18-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.1**	--	--	--	--
BDC-05-18	BDC-05-18-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.4**	--	--	--	--
BDC-05-18	BDC-05-18-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-05-18	BDC-05-18-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-05-18	BDC-05-18-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.6**	--	--	--	--
BDC-05-18	BDC-05-18-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.74**	--	--	--	--
BDC-05-18	BDC-05-18-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.86**	--	--	--	--
BDC-05-18	BDC-05-18-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.10**	--	--	--	--
BDC-05-18	BDC-05-18-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.42**	--	--	--	--
BDC-05-19	BDC-05-19-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**23**	--	--	--	--
BDC-05-19	BDC-05-19-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**36**	--	--	--	--
BDC-05-19	BDC-05-19-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**68**	--	--	--	--
BDC-05-19	BDC-05-19-DUP-120219	FD	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**68**	--	--	--	--
BDC-05-19	BDC-05-19-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**52**	--	--	--	--
BDC-05-19	BDC-05-19-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**13**	--	--	--	--
BDC-05-19	BDC-05-19-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.9**	--	--	--	--
BDC-05-19	BDC-05-19-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.9**	--	--	--	--
BDC-05-19	BDC-05-19-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.1**	--	--	--	--
BDC-05-19	BDC-05-19-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.9**	--	--	--	--
BDC-05-19	BDC-05-19-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--
BDC-05-19	BDC-05-19-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-19	BDC-05-19-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-19	BDC-05-19-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-19	BDC-05-19-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-05-19	BDC-05-19-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-DUP-160126	FD	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-DUP2-160809	FD	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-18	BDC-05-18-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--	--	**3**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--	--	**2.9**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	**1.6**	--	--	--	--	**0.4**
BDC-05-18	BDC-05-18-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--	--	**3.4**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--	--	**4.6**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--	--	**2.4**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--	--	**1.7**	--	--	--	--	0.2 U
BDC-05-18	BDC-05-18-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.31**	--	--	--	--	**3.42**
BDC-05-18	BDC-05-18-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.90**	--	--	--	--	--	**1.01**	--	--	--	--	**2.18**
BDC-05-18	BDC-05-18-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.81**	--	--	--	--	--	**1.47**	--	--	--	--	**0.60**
BDC-05-18	BDC-05-18-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.41**	--	--	--	--	--	**1.42**	--	--	--	--	**0.52**
BDC-05-19	BDC-05-19-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**15**	--	--	--	--	--	**21**	--	--	--	--	1 U
BDC-05-19	BDC-05-19-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.1**	--	--	--	--	--	**13**	--	--	--	--	**4.1**
BDC-05-19	BDC-05-19-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.7**	--	--	--	--	**14**
BDC-05-19	BDC-05-19-DUP-120219	FD	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.5**	--	--	--	--	**14**
BDC-05-19	BDC-05-19-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--	--	**1.4**	--	--	--	--	**23**
BDC-05-19	BDC-05-19-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**15**
BDC-05-19	BDC-05-19-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.1**	--	--	--	--	**15**
BDC-05-19	BDC-05-19-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**20**
BDC-05-19	BDC-05-19-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**9.6**
BDC-05-19	BDC-05-19-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**7.3**
BDC-05-19	BDC-05-19-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**3.1**
BDC-05-19	BDC-05-19-140211	N	2/11/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2**
BDC-05-19	BDC-05-19-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.8**
BDC-05-19	BDC-05-19-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.6**
BDC-05-19	BDC-05-19-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.6**
BDC-05-19	BDC-05-19-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.8**
BDC-05-19	BDC-05-19-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.6**
BDC-05-19	BDC-05-19-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.5**
BDC-05-19	BDC-05-19-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1**
BDC-05-19	BDC-05-19-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**
BDC-05-19	BDC-05-19-DUP-160126	FD	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**
BDC-05-19	BDC-05-19-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.6**
BDC-05-19	BDC-05-19-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-19	BDC-05-DUP2-160809	FD	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-19	BDC-05-19-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.2**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-19	BDC-05-19-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-DUP-170208	FD	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-DUP2-170801	FD	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-19	BDC-05-19-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-2,3,4,7,8	BDC-005-2,3,4,7,8-081023	N	10/23/2008	0.2 U	**1.8**	0.2 U	0.2 U	**0.4**	**1.0**	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1.0 U	--	0.2 U	2.5 U
BDC-05-20	BDC-05-20-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-DUP-130828	FD	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-19	BDC-05-19-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-DUP-170208	FD	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-DUP2-170801	FD	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-19	BDC-05-19-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-19	BDC-05-19-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-19	BDC-05-19-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-19	BDC-05-19-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-2,3,4,7,8	BDC-005-2,3,4,7,8-081023	N	10/23/2008	0.2 U	0.2 U	2.5 U	3.0 U	5.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**3.3**	0.2 U	--	0.2 U	0.2 U
BDC-05-20	BDC-05-20-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**45**	--	--	--	--
BDC-05-20	BDC-05-20-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**25**	--	--	--	--
BDC-05-20	BDC-05-20-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**17**	--	--	--	--
BDC-05-20	BDC-05-20-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**14**	--	--	--	--
BDC-05-20	BDC-05-20-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
BDC-05-20	BDC-05-20-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**17**	--	--	--	--
BDC-05-20	BDC-05-20-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.8**	--	--	--	--
BDC-05-20	BDC-05-20-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
BDC-05-20	BDC-05-20-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.5 J**	--	--	--	--
BDC-05-20	BDC-05-20-DUP-130828	FD	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.9 J**	--	--	--	--
BDC-05-20	BDC-05-20-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.1**	--	--	--	--
BDC-05-20	BDC-05-20-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--
BDC-05-20	BDC-05-20-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.8**	--	--	--	--
BDC-05-20	BDC-05-20-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-05-20	BDC-05-20-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-20	BDC-05-20-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-05-20	BDC-05-20-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-20	BDC-05-20-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-20	BDC-05-20-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-20	BDC-05-20-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
BDC-05-20	BDC-05-20-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
BDC-05-20	BDC-05-20-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-20	BDC-05-20-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-20	BDC-05-20-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-20	BDC-05-20-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-19	BDC-05-19-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-19	BDC-05-DUP-170208	FD	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-19	BDC-05-19-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.4**
BDC-05-19	BDC-05-19-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.2**
BDC-05-19	BDC-DUP2-170801	FD	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-05-19	BDC-05-19-171106	N	11/6/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-19	BDC-05-19-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-19	BDC-05-19-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-19	BDC-05-19-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-19	BDC-05-19-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-2,3,4,7,8	BDC-005-2,3,4,7,8-081023	N	10/23/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1.0 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**6.6**	**0.5**	--	0.2 U	0.2 U	1.0 U	**11**	0.2 U	--	--	1.0 U	0.2 U
BDC-05-20	BDC-05-20-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**7**	--	--	--	--	1 U
BDC-05-20	BDC-05-20-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--	--	--	--	**5.7**	--	--	--	--	**1.0**
BDC-05-20	BDC-05-20-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**2.9**	--	--	--	--	**2.5**
BDC-05-20	BDC-05-20-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.8**	--	--	--	--	**2.2**
BDC-05-20	BDC-05-20-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.4 U	--	--	--	--	--	0.4 U	--	--	--	--	**2**
BDC-05-20	BDC-05-20-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	**0.6**	--	--	--	--	**3.5**
BDC-05-20	BDC-05-20-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	**6.1**
BDC-05-20	BDC-05-20-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**8.1**
BDC-05-20	BDC-05-20-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**10 J**
BDC-05-20	BDC-05-20-DUP-130828	FD	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**6.9 J**
BDC-05-20	BDC-05-20-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**8.8**
BDC-05-20	BDC-05-20-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**7.8**
BDC-05-20	BDC-05-20-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**6.3**
BDC-05-20	BDC-05-20-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**7.5**
BDC-05-20	BDC-05-20-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**4.9**
BDC-05-20	BDC-05-20-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.8**
BDC-05-20	BDC-05-20-150426	N	4/26/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**6.9**
BDC-05-20	BDC-05-20-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.7**
BDC-05-20	BDC-05-20-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2**
BDC-05-20	BDC-05-20-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.7**
BDC-05-20	BDC-05-20-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**6.8**
BDC-05-20	BDC-05-20-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.2**
BDC-05-20	BDC-05-20-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.4**
BDC-05-20	BDC-05-20-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.8**
BDC-05-20	BDC-05-20-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-20	BDC-05-20-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-DUP3-171107	FD	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-20	BDC-05-20-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-DUP2-160421	FD	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-DUP3-161102	FD	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-DUP3-170503	FD	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-20	BDC-05-20-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-20	BDC-05-20-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-20	BDC-DUP3-171107	FD	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-20	BDC-05-20-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-20	BDC-05-20-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-20	BDC-05-20-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-20	BDC-05-20-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-21	BDC-05-21-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-05-21	BDC-05-21-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.0**	--	--	--	--
BDC-05-21	BDC-05-21-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-21	BDC-05-21-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-21	BDC-05-21-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-21	BDC-05-21-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-21	BDC-05-21-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-21	BDC-05-21-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-05-21	BDC-05-21-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-21	BDC-05-21-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-05-21	BDC-05-21-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3**	--	--	--	--
BDC-05-21	BDC-05-21-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--
BDC-05-21	BDC-05-21-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--
BDC-05-21	BDC-05-21-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--
BDC-05-21	BDC-05-21-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-05-21	BDC-05-21-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--
BDC-05-21	BDC-05-21-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
BDC-05-21	BDC-05-21-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-05-21	BDC-05-21-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--
BDC-05-21	BDC-05-21-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-05-21	BDC-05-DUP2-160421	FD	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-05-21	BDC-05-21-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-21	BDC-05-21-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-21	BDC-DUP3-161102	FD	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-21	BDC-05-21-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-05-21	BDC-05-21-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-21	BDC-DUP3-170503	FD	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-21	BDC-05-21-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-21	BDC-05-21-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-20	BDC-05-20-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-20	BDC-05-20-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.1**
BDC-05-20	BDC-DUP3-171107	FD	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**
BDC-05-20	BDC-05-20-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**1.04**
BDC-05-20	BDC-05-20-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.90**
BDC-05-20	BDC-05-20-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.86**
BDC-05-20	BDC-05-20-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.78**
BDC-05-21	BDC-05-21-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**14**
BDC-05-21	BDC-05-21-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	**4.7**
BDC-05-21	BDC-05-21-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**5.9**
BDC-05-21	BDC-05-21-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**2.5**
BDC-05-21	BDC-05-21-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**2.9**
BDC-05-21	BDC-05-21-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	**2.9**
BDC-05-21	BDC-05-21-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**3.3**
BDC-05-21	BDC-05-21-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**6.5**
BDC-05-21	BDC-05-21-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**7.7**
BDC-05-21	BDC-05-21-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**7.3**
BDC-05-21	BDC-05-21-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**3.4**
BDC-05-21	BDC-05-21-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.2**
BDC-05-21	BDC-05-21-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**5.6**
BDC-05-21	BDC-05-21-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.4**
BDC-05-21	BDC-05-21-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3.5**
BDC-05-21	BDC-05-21-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**4.4**
BDC-05-21	BDC-05-21-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**3**
BDC-05-21	BDC-05-21-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**4.1**
BDC-05-21	BDC-05-21-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.9**
BDC-05-21	BDC-05-21-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.4**
BDC-05-21	BDC-05-DUP2-160421	FD	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.4**
BDC-05-21	BDC-05-21-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.6**
BDC-05-21	BDC-05-21-161102	N	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-21	BDC-DUP3-161102	FD	11/2/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-21	BDC-05-21-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.4**
BDC-05-21	BDC-05-21-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2**
BDC-05-21	BDC-DUP3-170503	FD	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.9**
BDC-05-21	BDC-05-21-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.5**
BDC-05-21	BDC-05-21-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.2**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-21	BDC-05-21-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-21	BDC-05-21-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-21	BDC-05-21-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.43**	--	--	--	--
BDC-05-21	BDC-05-21-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.20**	--	--	--	--
BDC-05-21	BDC-05-21-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-21	BDC-05-21-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-22	BDC-05-22-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.6**	--	--	--	--
BDC-05-22	BDC-05-22-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
BDC-05-22	BDC-05-22-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**13**	--	--	--	--
BDC-05-22	BDC-05-22-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-05-22	BDC-05-22-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--
BDC-05-22	BDC-05-22-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.5**	--	--	--	--
BDC-05-22	BDC-05-22-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
BDC-05-22	BDC-05-22-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.4**	--	--	--	--
BDC-05-22	BDC-05-22-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
BDC-05-22	BDC-05-22-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.3**	--	--	--	--
BDC-05-22	BDC-05-22-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.9**	--	--	--	--
BDC-05-22	BDC-05-22-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.7**	--	--	--	--
BDC-05-22	BDC-05-22-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.7**	--	--	--	--
BDC-05-22	BDC-05-22-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.5**	--	--	--	--
BDC-05-22	BDC-05-22-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.8**	--	--	--	--
BDC-05-22	BDC-05-22-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--
BDC-05-22	BDC-05-22-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--
BDC-05-22	BDC-05-22-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.5**	--	--	--	--
BDC-05-22	BDC-05-22-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.5**	--	--	--	--
BDC-05-22	BDC-05-22-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.1**	--	--	--	--
BDC-05-22	BDC-05-22-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.3**	--	--	--	--
BDC-05-22	BDC-05-22-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.2**	--	--	--	--
BDC-05-22	BDC-05-22-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7**	--	--	--	--
BDC-05-22	BDC-05-22-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.4**	--	--	--	--
BDC-05-22	BDC-05-22-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.4**	--	--	--	--
BDC-05-22	BDC-05-22-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.1**	--	--	--	--
BDC-05-22	BDC-05-22-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.7**	--	--	--	--
BDC-05-22	BDC-05-22-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10.6**	--	--	--	--
BDC-05-22	BDC-05-22-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11.9**	--	--	--	--
BDC-05-22	BDC-05-22-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.48**	--	--	--	--
BDC-05-22	BDC-05-22-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.87**	--	--	--	--
BDC-05-23	BDC-05-23-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.2**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-21	BDC-05-21-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.83**
BDC-05-21	BDC-05-21-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.72**
BDC-05-21	BDC-05-21-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.50**
BDC-05-21	BDC-05-21-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.32**
BDC-05-22	BDC-05-22-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.1**	--	--	--	--	**1**
BDC-05-22	BDC-05-22-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--	--	--	--	**2.1**	--	--	--	--	1.0 U
BDC-05-22	BDC-05-22-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**2**	--	--	--	--	**0.4**
BDC-05-22	BDC-05-22-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-22	BDC-05-22-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**2**	--	--	--	--	**0.5**
BDC-05-22	BDC-05-22-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.8**	--	--	--	--	**0.8**
BDC-05-22	BDC-05-22-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	**1.6**	--	--	--	--	**0.7**
BDC-05-22	BDC-05-22-130226	N	2/26/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.3**	--	--	--	--	**1.2**
BDC-05-22	BDC-05-22-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.2**	--	--	--	--	**0.6**
BDC-05-22	BDC-05-22-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.2**	--	--	--	--	**0.2**
BDC-05-22	BDC-05-22-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.2**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.4**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.2**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.2**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.9**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.9**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.1**	--	--	--	--	**1.5**
BDC-05-22	BDC-05-22-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**0.8**
BDC-05-22	BDC-05-22-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-05-22	BDC-05-22-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.55**	--	--	--	--	**1.02**
BDC-05-22	BDC-05-22-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.39**	--	--	--	--	**1.25**
BDC-05-22	BDC-05-22-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.54**	--	--	--	--	**1.02**
BDC-05-22	BDC-05-22-191106	N	11/6/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	**0.35**	--	--	--	--	**0.69**
BDC-05-23	BDC-05-23-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-23	BDC-05-23-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-23	BDC-05-23-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.8**	--	--	--	--
BDC-05-23	BDC-05-23-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.7**	--	--	--	--
BDC-05-23	BDC-05-23-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-05-23	BDC-05-23-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.4**	--	--	--	--
BDC-05-23	BDC-05-23-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.2**	--	1.0 U	--	--
BDC-05-23	BDC-05-23-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.9**	--	--	--	--
BDC-05-23	BDC-05-23-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-05-23	BDC-05-23-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-05-23	BDC-05-23-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--
BDC-05-23	BDC-05-23-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.7**	--	--	--	--
BDC-05-23	BDC-05-23-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-05-23	BDC-05-23-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**21**	--	--	--	--
BDC-05-23	BDC-05-23-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3**	--	--	--	--
BDC-05-23	BDC-05-23-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.7**	--	--	--	--
BDC-05-23	BDC-05-23-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.5**	--	--	--	--
BDC-05-23	BDC-05-23-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--
BDC-05-23	BDC-05-23-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--
BDC-05-23	BDC-05-23-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
BDC-05-23	BDC-05-23-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.9**	--	--	--	--
BDC-05-23	BDC-05-23-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.5**	--	--	--	--
BDC-05-23	BDC-05-23-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--
BDC-05-23	BDC-05-23-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.9**	--	--	--	--
BDC-05-23	BDC-05-23-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4**	--	--	--	--
BDC-05-23	BDC-05-23-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.2**	--	--	--	--
BDC-05-23	BDC-05-23-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.7**	--	--	--	--
BDC-05-23	BDC-05-23-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--
BDC-05-23	BDC-05-23-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--
BDC-05-23	BDC-05-23-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-05-23	BDC-05-23-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.6**	--	--	--	--
BDC-05-23	BDC-05-23-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.31**	--	--	--	--
BDC-05-23	BDC-05-23-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.66**	--	--	--	--
BDC-05-23	BDC-05-23-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.00**	--	--	--	--
BDC-05-23	BDC-05-23-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.42**	--	--	--	--
BDC-05-24	BDC-05-24-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--
BDC-05-24	BDC-05-24-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4**	--	--	--	--
BDC-05-24	BDC-05-24-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-23	BDC-05-23-111103	N	11/3/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--	--	--	--	1.0 U	--	--	--	--	1.0 U
BDC-05-23	BDC-05-23-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.6**	--	--	--	--	**0.7**
BDC-05-23	BDC-05-23-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-120507	N	5/7/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	**0.8**
BDC-05-23	BDC-05-23-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	**0.9**
BDC-05-23	BDC-05-23-121116	N	11/16/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	**0.8**	--	--	--	--	**0.5**
BDC-05-23	BDC-05-23-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	**1**
BDC-05-23	BDC-05-23-130523	N	5/23/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	**1**
BDC-05-23	BDC-05-23-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-23	BDC-05-23-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**2.2**	--	--	--	--	**5.4**
BDC-05-23	BDC-05-23-131114	N	11/14/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**0.9**
BDC-05-23	BDC-05-23-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**1.2**
BDC-05-23	BDC-05-23-140513	N	5/13/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**1**
BDC-05-23	BDC-05-23-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**1.2**
BDC-05-23	BDC-05-23-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**1**
BDC-05-23	BDC-05-23-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.7**
BDC-05-23	BDC-05-23-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.4**
BDC-05-23	BDC-05-23-150720	N	7/20/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**2.7**
BDC-05-23	BDC-05-23-151027	N	10/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.6**
BDC-05-23	BDC-05-23-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.9**
BDC-05-23	BDC-05-23-160421	N	4/21/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.4**
BDC-05-23	BDC-05-23-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.1**
BDC-05-23	BDC-05-23-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-23	BDC-05-23-170207	N	2/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.3**
BDC-05-23	BDC-05-23-170503	N	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-23	BDC-05-23-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-23	BDC-05-23-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.8**
BDC-05-23	BDC-05-23-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-23	BDC-05-23-181107	N	11/7/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**1.61**
BDC-05-23	BDC-05-23-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**1.30**
BDC-05-23	BDC-05-23-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**1.46**
BDC-05-24	BDC-05-24-110731	N	7/31/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.6**
BDC-05-24	BDC-05-24-111101	N	11/1/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**2**	--	--	--	--	**2.2**
BDC-05-24	BDC-05-24-120219	N	2/19/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**0.8**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-24	BDC-05-24-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-DUP-140806	FD	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-DUP-150121	FD	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-DUP1-160420	FD	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-05-24	BDC-05-24-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-1	DPS17-1-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-1	DPS17-1(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-1	DPS17-1(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-10	DPS17-10-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-11	DPS17-11-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-05-24	BDC-05-24-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
BDC-05-24	BDC-05-24-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4**	--	--	--	--
BDC-05-24	BDC-05-24-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-05-24	BDC-05-24-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.1**	--	--	--	--
BDC-05-24	BDC-05-24-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.6**	--	--	--	--
BDC-05-24	BDC-05-24-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.4**	--	--	--	--
BDC-05-24	BDC-05-24-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.3**	--	--	--	--
BDC-05-24	BDC-05-24-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-05-24	BDC-05-24-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.8**	--	--	--	--
BDC-05-24	BDC-05-24-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
BDC-05-24	BDC-05-24-DUP-140806	FD	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--
BDC-05-24	BDC-05-24-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.2**	--	--	--	--
BDC-05-24	BDC-05-24-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--
BDC-05-24	BDC-05-24-DUP-150121	FD	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--
BDC-05-24	BDC-05-24-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-05-24	BDC-05-24-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-05-24	BDC-05-24-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-05-24	BDC-05-24-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-24	BDC-05-24-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-24	BDC-05-24-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-05-24	BDC-05-DUP1-160420	FD	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--
BDC-05-24	BDC-05-24-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--
BDC-05-24	BDC-05-24-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
BDC-05-24	BDC-05-24-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-05-24	BDC-05-24-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-24	BDC-05-24-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
BDC-05-24	BDC-05-24-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-05-24	BDC-05-24-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-24	BDC-05-24-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.26**	--	--	--	--
BDC-05-24	BDC-05-24-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
BDC-05-24	BDC-05-24-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--
DPS17-1	DPS17-1-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--
DPS17-1	DPS17-1(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-1	DPS17-1(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-10	DPS17-10-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
DPS17-11	DPS17-11-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-05-24	BDC-05-24-120506	N	5/6/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.3**	--	--	--	--	**1**
BDC-05-24	BDC-05-24-120905	N	9/5/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.2**	--	--	--	--	**0.9**
BDC-05-24	BDC-05-24-121115	N	11/15/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5 U	--	--	--	--	--	0.5 U	--	--	--	--	0.5 U
BDC-05-24	BDC-05-24-130225	N	2/25/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	**1.9**
BDC-05-24	BDC-05-24-130522	N	5/22/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.8**	--	--	--	--	**2.1**
BDC-05-24	BDC-05-24-130828	N	8/28/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	**1.6**
BDC-05-24	BDC-05-24-131113	N	11/13/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**1.4**
BDC-05-24	BDC-05-24-140212	N	2/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**0.6**
BDC-05-24	BDC-05-24-140512	N	5/12/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**1.6**
BDC-05-24	BDC-05-24-140806	N	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**1.8**
BDC-05-24	BDC-05-24-DUP-140806	FD	8/6/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**1.6**
BDC-05-24	BDC-05-24-141110	N	11/10/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**12**
BDC-05-24	BDC-05-24-150121	N	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**1.6**
BDC-05-24	BDC-05-24-DUP-150121	FD	1/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**1.5**
BDC-05-24	BDC-05-24-150427	N	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	**2.5**
BDC-05-24	BDC-05-24-DUP-150427	FD	4/27/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	**2.5**
BDC-05-24	BDC-05-24-150721	N	7/21/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**3.9**
BDC-05-24	BDC-05-24-151028	N	10/28/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	**1.3**
BDC-05-24	BDC-05-24-160126	N	1/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**1.9**
BDC-05-24	BDC-05-24-160420	N	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**0.7**
BDC-05-24	BDC-05-DUP1-160420	FD	4/20/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**1**
BDC-05-24	BDC-05-24-160809	N	8/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	**2.2**
BDC-05-24	BDC-05-24-161103	N	11/3/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**0.8**
BDC-05-24	BDC-05-24-170208	N	2/8/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**2.1**
BDC-05-24	BDC-05-24-170504	N	5/4/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-24	BDC-05-24-170801	N	8/1/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-24	BDC-05-24-171107	N	11/7/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.5**
BDC-05-24	BDC-05-24-180502	N	5/2/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	0.20 U
BDC-05-24	BDC-05-24-181106	N	11/6/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.66**
BDC-05-24	BDC-05-24-190502	N	5/2/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.42**
BDC-05-24	BDC-05-24-191105	N	11/5/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.20 U	--	--	--	--	--	0.20 U	--	--	--	--	**0.39**
DPS17-1	DPS17-1-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**23**	--	--	--	--	--	**26**	--	--	--	--	0.2 U
DPS17-1	DPS17-1(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-1	DPS17-1(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-10	DPS17-10-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.0**	--	--	--	--	0.2 U
DPS17-11	DPS17-11-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--	--	**1.6**	--	--	--	--	0.2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
DPS17-12	DPS17-12-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-13	DPS17-13-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-13	DUP OF DPS17-13-100818	FD	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-14	DPS17-14-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-15	DPS17-15-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-16	DPS17-16-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-17	DPS17-17-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-18	DPS17-18-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-19	DPS17-19-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-19	DUP OF DPS17-19-101008	FD	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-19	DPS17-19(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-19	DPS17-19(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-2	DPS17-2-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-20	DPS17-20-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-21	DPS17-21-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-22	DPS17-22-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-23	DPS17-23-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-24	DPS17-24-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-24	DUP OF DPS17-24-101025	FD	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-25	DPS17-25-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-26	DPS17-26-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-27	DPS17-27-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-28	DPS17-28-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-29	DPS17-29-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-3	DPS17-3-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-30	DPS17-30-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-31	DPS17-31-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-32	DPS17-32-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-33	DPS17-33-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-35	DPS17-35-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-36	DPS17-36-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-36	DPS17-36(28.5)-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-36	DPS17-36(38.5)-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-36	DUP OF DPS17-36(28.5)-110209	FD	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-37	DPS17-37-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-38	DPS17-38-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
DPS17-12	DPS17-12-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
DPS17-13	DPS17-13-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-13	DUP OF DPS17-13-100818	FD	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-14	DPS17-14-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-15	DPS17-15-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--
DPS17-16	DPS17-16-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-17	DPS17-17-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-18	DPS17-18-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
DPS17-19	DPS17-19-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**51**	--	--	--	--
DPS17-19	DUP OF DPS17-19-101008	FD	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**47**	--	--	--	--
DPS17-19	DPS17-19(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-19	DPS17-19(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-2	DPS17-2-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.0**	--	--	--	--
DPS17-20	DPS17-20-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**15**	--	--	--	--
DPS17-21	DPS17-21-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--
DPS17-22	DPS17-22-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**70**	--	--	--	--
DPS17-23	DPS17-23-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
DPS17-24	DPS17-24-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**22**	--	--	--	--
DPS17-24	DUP OF DPS17-24-101025	FD	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20 J**	--	--	--	--
DPS17-25	DPS17-25-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**54**	--	--	--	--
DPS17-26	DPS17-26-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**22**	--	--	--	--
DPS17-27	DPS17-27-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-28	DPS17-28-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-29	DPS17-29-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**14**	--	--	--	--
DPS17-3	DPS17-3-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.3**	--	--	--	--
DPS17-30	DPS17-30-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-31	DPS17-31-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
DPS17-32	DPS17-32-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-33	DPS17-33-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-35	DPS17-35-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--
DPS17-36	DPS17-36-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**26**	--	--	--	--
DPS17-36	DPS17-36(28.5)-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--
DPS17-36	DPS17-36(38.5)-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-36	DUP OF DPS17-36(28.5)-110209	FD	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.4**	--	--	--	--
DPS17-37	DPS17-37-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--
DPS17-38	DPS17-38-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
DPS17-12	DPS17-12-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-13	DPS17-13-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
DPS17-13	DUP OF DPS17-13-100818	FD	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
DPS17-14	DPS17-14-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-15	DPS17-15-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-16	DPS17-16-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-17	DPS17-17-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-18	DPS17-18-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-19	DPS17-19-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**56**	--	--	--	--	--	**48**	--	--	--	--	0.2 U
DPS17-19	DUP OF DPS17-19-101008	FD	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**53**	--	--	--	--	--	**47**	--	--	--	--	0.2 U
DPS17-19	DPS17-19(28.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-19	DPS17-19(38.5)-110210	N	2/10/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-2	DPS17-2-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--	--	**2.8**	--	--	--	--	0.2 U
DPS17-20	DPS17-20-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--	--	**12**	--	--	--	--	0.2 U
DPS17-21	DPS17-21-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--	--	**21**	--	--	--	--	0.2 U
DPS17-22	DPS17-22-101008	N	10/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--	--	**45**	--	--	--	--	**0.7**
DPS17-23	DPS17-23-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**34**	--	--	--	--	--	**38**	--	--	--	--	0.2 U
DPS17-24	DPS17-24-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**40**	--	--	--	--	--	**37**	--	--	--	--	0.2 U
DPS17-24	DUP OF DPS17-24-101025	FD	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**40**	--	--	--	--	--	**35**	--	--	--	--	0.2 U
DPS17-25	DPS17-25-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.6**	--	--	--	--	--	**32**	--	--	--	--	0.2 U
DPS17-26	DPS17-26-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--	--	**12**	--	--	--	--	**0.5**
DPS17-27	DPS17-27-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	0.2 U
DPS17-28	DPS17-28-101025	N	10/25/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-29	DPS17-29-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--	--	**6.9**	--	--	--	--	**2.5**
DPS17-3	DPS17-3-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.8**	--	--	--	--	0.2 U
DPS17-30	DPS17-30-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-31	DPS17-31-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**2.1**	--	--	--	--	0.2 U
DPS17-32	DPS17-32-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-33	DPS17-33-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-35	DPS17-35-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**1.0**
DPS17-36	DPS17-36-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**19**	--	--	--	--	--	**28**	--	--	--	--	0.2 U
DPS17-36	DPS17-36(28.5)-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
DPS17-36	DPS17-36(38.5)-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-36	DUP OF DPS17-36(28.5)-110209	FD	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
DPS17-37	DPS17-37-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	**8.1**	--	--	--	--	0.2 U
DPS17-38	DPS17-38-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
DPS17-39	DPS17-39-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-4	DPS17-4-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-40	DPS17-40-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-41	DPS17-41-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-42	DPS17-42-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-43	DPS17-43-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-44	DPS17-44-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-45	DPS17-45-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-45	DUP OF DPS17-45-101208	FD	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-46	DPS17-46-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-47	DPS17-47-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-48	DPS17-48-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-49	DPS17-49-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-5	DPS17-5-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-50	DPS17-50-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-51	DPS17-51-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-51	DUP OF DPS17-51-110209	FD	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-52	DPS17-52-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-53	DPS17-53-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-54	DPS17-54-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-55	DPS17-55-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-56	DPS17-56-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-57	DPS17-57-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-58	DPS17-58-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-59	DPS17-59-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-6	DPS17-6-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-60	DPS17-60-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-61	DPS17-61-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-62	DPS17-62-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-63	DPS17-63-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-64	DPS17-64-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-65	DPS17-65-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-66	DPS17-66-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-67	DPS17-67-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-67	DUP OF DPS17-67-110317	FD	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-68	DPS17-68-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
DPS17-39	DPS17-39-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.5**	--	--	--	--
DPS17-4	DPS17-4-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.2**	--	--	--	--
DPS17-40	DPS17-40-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.1**	--	--	--	--
DPS17-41	DPS17-41-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.8**	--	--	--	--
DPS17-42	DPS17-42-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.4**	--	--	--	--
DPS17-43	DPS17-43-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--
DPS17-44	DPS17-44-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--
DPS17-45	DPS17-45-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**27**	--	--	--	--
DPS17-45	DUP OF DPS17-45-101208	FD	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**27**	--	--	--	--
DPS17-46	DPS17-46-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.1**	--	--	--	--
DPS17-47	DPS17-47-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.7**	--	--	--	--
DPS17-48	DPS17-48-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.5**	--	--	--	--
DPS17-49	DPS17-49-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.5**	--	--	--	--
DPS17-5	DPS17-5-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.7**	--	--	--	--
DPS17-50	DPS17-50-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
DPS17-51	DPS17-51-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**18**	--	--	--	--
DPS17-51	DUP OF DPS17-51-110209	FD	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**17**	--	--	--	--
DPS17-52	DPS17-52-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
DPS17-53	DPS17-53-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-54	DPS17-54-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.0**	--	--	--	--
DPS17-55	DPS17-55-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
DPS17-56	DPS17-56-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
DPS17-57	DPS17-57-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.7**	--	--	--	--
DPS17-58	DPS17-58-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.1**	--	--	--	--
DPS17-59	DPS17-59-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.6**	--	--	--	--
DPS17-6	DPS17-6-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--
DPS17-60	DPS17-60-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
DPS17-61	DPS17-61-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
DPS17-62	DPS17-62-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.8**	--	--	--	--
DPS17-63	DPS17-63-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--
DPS17-64	DPS17-64-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-65	DPS17-65-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.2**	--	--	--	--
DPS17-66	DPS17-66-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-67	DPS17-67-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
DPS17-67	DUP OF DPS17-67-110317	FD	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
DPS17-68	DPS17-68-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.3**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
DPS17-39	DPS17-39-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.8**	--	--	--	--	**0.6**
DPS17-4	DPS17-4-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
DPS17-40	DPS17-40-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.8**	--	--	--	--	**2.7**
DPS17-41	DPS17-41-101207	N	12/7/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**17**	--	--	--	--	--	**24**	--	--	--	--	0.2 U
DPS17-42	DPS17-42-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**14**	--	--	--	--	--	**24**	--	--	--	--	0.2 U
DPS17-43	DPS17-43-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--	--	**5.7**	--	--	--	--	0.2 U
DPS17-44	DPS17-44-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**7.6**	--	--	--	--	**8.2**
DPS17-45	DPS17-45-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.7**	--	--	--	--	--	**7.2**	--	--	--	--	**0.3**
DPS17-45	DUP OF DPS17-45-101208	FD	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.9**	--	--	--	--	--	**7.5**	--	--	--	--	**0.3**
DPS17-46	DPS17-46-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**1.9**	--	--	--	--	0.2 U
DPS17-47	DPS17-47-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--	--	**4.1**	--	--	--	--	0.2 U
DPS17-48	DPS17-48-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--	--	**6.6**	--	--	--	--	**2.9**
DPS17-49	DPS17-49-101208	N	12/8/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--	--	**13**	--	--	--	--	0.2 U
DPS17-5	DPS17-5-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--	--	**2.1**	--	--	--	--	0.2 U
DPS17-50	DPS17-50-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.8**	--	--	--	--	0.2 U
DPS17-51	DPS17-51-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.2**	--	--	--	--	--	**19**	--	--	--	--	0.2 U
DPS17-51	DUP OF DPS17-51-110209	FD	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.3**	--	--	--	--	--	**20**	--	--	--	--	0.2 U
DPS17-52	DPS17-52-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.0**	--	--	--	--	--	**8.4**	--	--	--	--	0.2 U
DPS17-53	DPS17-53-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-54	DPS17-54-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**4.9**
DPS17-55	DPS17-55-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.6**	--	--	--	--	**1.7**
DPS17-56	DPS17-56-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-57	DPS17-57-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
DPS17-58	DPS17-58-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.4**	--	--	--	--	**0.3**
DPS17-59	DPS17-59-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.1**	--	--	--	--	0.2 U
DPS17-6	DPS17-6-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**3.3**	--	--	--	--	0.2 U
DPS17-60	DPS17-60-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**2.0**	--	--	--	--	0.2 U
DPS17-61	DPS17-61-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**2.3**	--	--	--	--	0.2 U
DPS17-62	DPS17-62-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.4**	--	--	--	--	0.2 U
DPS17-63	DPS17-63-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-64	DPS17-64-110209	N	2/9/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-65	DPS17-65-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
DPS17-66	DPS17-66-110208	N	2/8/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
DPS17-67	DPS17-67-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.9**	--	--	--	--	**1.4**
DPS17-67	DUP OF DPS17-67-110317	FD	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.8**	--	--	--	--	**1.2**
DPS17-68	DPS17-68-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**2.3**	--	--	--	--	0.2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
DPS17-69	DPS17-69-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-7	DPS17-7-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-70	DPS17-70-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-71	DPS17-71-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-72	DPS17-72-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-73	DPS17-73-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-74	DPS17-74-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-75	DPS17-75-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-8	DPS17-8-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DPS17-9	DPS17-9-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SWMU-20																															
BDC-MW-10A	10A1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**150**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**228**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-10A	MW-10A-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
DPS17-69	DPS17-69-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.2**	--	--	--	--
DPS17-7	DPS17-7-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**19**	--	--	--	--
DPS17-70	DPS17-70-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.6**	--	--	--	--
DPS17-71	DPS17-71-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.2**	--	--	--	--
DPS17-72	DPS17-72-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
DPS17-73	DPS17-73-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--
DPS17-74	DPS17-74-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
DPS17-75	DPS17-75-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
DPS17-8	DPS17-8-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
DPS17-9	DPS17-9-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.5**	--	--	--	--
SWMU-20																											
BDC-MW-10A	10A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**1.1 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10A	MW-10A-910201	N	2/1/1991	--	--	--	--	--	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	**228**	--	--	--	--
BDC-MW-10A	MW-10A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**470**	--	--	--	--
BDC-MW-10A	MW-10A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**421.26**	--	--	--	--
BDC-MW-10A	MW-10A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**297 J**	--	--	--	--
BDC-MW-10A	MW-10A-960201	N	2/1/1996	--	--	--	--	--	--	50 U	--	--	--	--	--	--	--	--	--	--	--	--	**249.16**	--	--	--	--
BDC-MW-10A	MW-10A-960501	N	5/1/1996	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**159.2**	--	--	--	--
BDC-MW-10A	MW-10A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**90.1**	--	--	--	--
BDC-MW-10A	MW-10A-961101	N	11/1/1996	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	--	--	--	--	--	--	**17.8**	--	--	--	--
BDC-MW-10A	MW-10A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**29**	--	--	--	--
BDC-MW-10A	MW-10A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**66.1**	--	--	--	--
BDC-MW-10A	MW-10A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**58.5**	--	--	--	--
BDC-MW-10A	MW-10A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**74.1**	--	--	--	--
BDC-MW-10A	MW-10A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**29.3**	--	--	--	--
BDC-MW-10A	MW-10A-981019	N	10/19/1998	1 U	1 U	1 U	**3.2**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.9**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**33.3**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**20.6**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**10.6**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**14.14**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**14.09**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**36**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**80**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**110**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**88**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**98**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
DPS17-69	DPS17-69-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.7**	--	--	--	--	0.2 U
DPS17-7	DPS17-7-090409	N	4/9/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**1.9**	--	--	--	--	0.2 U
DPS17-70	DPS17-70-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.8**	--	--	--	--	0.2 U
DPS17-71	DPS17-71-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.5**	--	--	--	--	0.2 U
DPS17-72	DPS17-72-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	0.2 U
DPS17-73	DPS17-73-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
DPS17-74	DPS17-74-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.3**	--	--	--	--	--	**0.5**	--	--	--	--	0.2 U
DPS17-75	DPS17-75-110317	N	3/17/2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.4**	--	--	--	--	--	**0.6**	--	--	--	--	0.2 U
DPS17-8	DPS17-8-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**31**	--	--	--	--	--	**55**	--	--	--	--	0.2 U
DPS17-9	DPS17-9-100818	N	8/18/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.0**	--	--	--	--	--	**3.0**	--	--	--	--	0.2 U
SWMU-20																														
BDC-MW-10A	10A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**700**	ND	ND	--	--	--	**210**	--	--	--	--	**4.0 J**
BDC-MW-10A	MW-10A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**550**	--	--	--	--	--	**270**	--	--	--	--	**54**
BDC-MW-10A	MW-10A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**180**	--	--	--	--	--	**120**	--	--	--	--	**120**
BDC-MW-10A	MW-10A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**635.8**	--	--	--	--	--	**333.23**	--	--	--	--	**116.25**
BDC-MW-10A	MW-10A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**754 J**	--	--	--	--	--	**411 J**	--	--	--	--	**16.12**
BDC-MW-10A	MW-10A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**468.85**	--	--	--	--	--	**268.41**	--	--	--	--	**31.6**
BDC-MW-10A	MW-10A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	**242.1**	--	--	--	--	--	**115.3**	--	--	--	--	**651.2**
BDC-MW-10A	MW-10A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--	--	--	**114**	--	--	--	--	--	**56.7**	--	--	--	--	**80.9**
BDC-MW-10A	MW-10A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	**342**	--	--	--	--	--	**128**	--	--	--	--	**16.7**
BDC-MW-10A	MW-10A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**67.5**	--	--	--	--	--	**28.4**	--	--	--	--	**48.2**
BDC-MW-10A	MW-10A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**77.8**	--	--	--	--	--	**38.2**	--	--	--	--	**33.4**
BDC-MW-10A	MW-10A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**76.5**	--	--	--	--	--	**36.6**	--	--	--	--	**9.8**
BDC-MW-10A	MW-10A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**70.3**	--	--	--	--	--	**48.8**	--	--	--	--	**8.8**
BDC-MW-10A	MW-10A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**72.5**	--	--	--	--	--	**23.8**	--	--	--	--	**8.7**
BDC-MW-10A	MW-10A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**86.4**	1 U	2 U	1 U	1 U	--	**33.9**	1 U	--	--	--	**1.3**
BDC-MW-10A	MW-10A-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**38**	1 U	1 U	**3**	1 U	--	**19.2**	1.46 U	--	--	--	**12.1**
BDC-MW-10A	MW-10A-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**21.5**	1 U	1 U	1 U	1 U	--	**14**	1.46 U	--	--	--	**3.5**
BDC-MW-10A	MW-10A-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**16.6**	1 U	1 U	1 U	1 U	--	**8.3**	1.46 U	--	--	--	**3**
BDC-MW-10A	MW-10A-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**21.63**	1 U	1 U	1 U	1 U	--	**13.11**	1.46 U	--	--	--	**3.32**
BDC-MW-10A	MW-10A-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**30.3**	1 U	1 U	1 U	1 U	--	**17.02**	1.46 U	--	--	--	**3.32 J**
BDC-MW-10A	MW-10A-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**11**	1 U	1 U	1 U	1 U	--	**18**	1.5 U	--	--	--	**2.9**
BDC-MW-10A	MW-10A-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**24**	1 U	--	**2.7**	1 U	5 U	**24**	1 U	2.0 U	--	5 U	**28**
BDC-MW-10A	MW-10A-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**24**	1 U	--	**2.6**	1 U	5 U	**29**	1 U	2.0 U	--	5 U	**54**
BDC-MW-10A	MW-10A-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**34**	1 U	--	**2.2**	1 U	5 U	**32**	1 U	2 U	--	5 U	**36**
BDC-MW-10A	MW-10A-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**58**	1 U	--	**2**	1 U	5 U	**49**	1 U	2 U	--	5 U	**9.1**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-10A	MW-10A-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-040823	N	8/23/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-041019	N	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-050221	N	2/21/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-050511	N	5/11/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-060221	N	2/21/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-10A	DC-MW10A-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-10A	MW-10A-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	DC-MW10A-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-10A	MW-10A-080519	N	5/19/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**600**	5 U	--	1 U	**5.1**
BDC-MW-10A	MW-10A-090518	N	5/18/2009	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	10 U	4 U	10 U	2 U	10 U	--	2 U	2 U	--	2 U	2 U	2 U	10 U	2 U	2 U	**66**	10 U	--	2 U	10 U
BDC-MW-10A	MW-10A-091116	N	11/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10A	MW-10A-110503	N	5/3/2011	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	50 U	10 U	--	2 U	50 UJ
BDC-MW-10A	MW-10A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-10A	MW-10A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10A	MW-10A-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10A	MW-10A-130521	N	5/21/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10A	MW-10A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10A	MW-10A-140507	N	5/7/2014	2.5 U	2.5 U	1 U	1 U	--	2.5 U	1 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	--	2.5 U	1 U	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	--	--	2.5 U	25 U
BDC-MW-10A	MW-10A-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	10C1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	**4.3 J**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-10A	MW-10A-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**80**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-040823	N	8/23/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**170**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-041019	N	10/19/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**100**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-050221	N	2/21/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**24**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-050511	N	5/11/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**26**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-050822	N	8/22/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**48**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**47**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-060221	N	2/21/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**42**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**63**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-060816	N	8/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**38**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**7.4**	0.2 U	--	0.2 U	0.2 U
BDC-MW-10A	DC-MW10A-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**32**	1.0 U	--	1.0 U	1.0 U
BDC-MW-10A	MW-10A-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**28**	1 U	--	1 U	1 U
BDC-MW-10A	DC-MW10A-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**22**	1.0 U	--	1.0 U	1.0 U
BDC-MW-10A	MW-10A-080519	N	5/19/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**22**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-081124	N	11/24/2008	1 U	1 U	**13**	**1400**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-090518	N	5/18/2009	2 U	2 U	10 U	**830**	20 U	10 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-10A	MW-10A-091116	N	11/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10A	MW-10A-110503	N	5/3/2011	2 U	2 U	50 U	50 U	50 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	2 U	--	2 U	2 U
BDC-MW-10A	MW-10A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-10A	MW-10A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10A	MW-10A-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10A	MW-10A-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10A	MW-10A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10A	MW-10A-140507	N	5/7/2014	2.5 U	2.5 U	25 U	25 U	130 UJ	25 U	1 U	2.5 U	2.5 U	2.5 U	--	2.5 U	2.5 U	2.5 U	1 U	2.5 U	2.5 U	1 U	2.5 U	1 U	1 U	--	2.5 U	2.5 U
BDC-MW-10A	MW-10A-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	10C1-890801	N	8/1/1989	--	--	--	--	--	--	**0.8 J**	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-10C	MW-10C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**14**	--	--	--	--
BDC-MW-10C	MW-10C-950501	N	5/1/1995	--	--	--	--	--	--	**1.15**	--	--	--	--	--	--	--	--	--	--	--	--	**1.93**	--	--	--	--
BDC-MW-10C	MW-10C-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-10C	MW-10C-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-10C	MW-10C-960501	N	5/1/1996	--	--	--	--	--	--	**1.33**	--	--	--	--	--	--	--	--	--	--	--	--	**1.01**	--	--	--	--
BDC-MW-10C	MW-10C-960801	N	8/1/1996	--	--	--	--	--	--	**1.4**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-10A	MW-10A-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**29**	1 U	--	**2.2**	1 U	5 U	**27**	1 U	2 U	--	5 U	**6.4**
BDC-MW-10A	MW-10A-040823	N	8/23/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**14**	1 U	--	**2.3**	1 U	5 U	**12**	1 U	2 U	--	5 U	**4**
BDC-MW-10A	MW-10A-041019	N	10/19/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**15**	1 U	--	**2.3**	1 U	5 U	**15**	1 U	2 U	--	5 U	**23**
BDC-MW-10A	MW-10A-050221	N	2/21/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.7**	1 U	--	**1**	1 U	5 U	**4.8**	1 U	2 U	--	5 U	**6.8**
BDC-MW-10A	MW-10A-050511	N	5/11/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.2**	1 U	--	1 U	1 U	5 U	**5.4**	1 U	2 U	--	5 U	**7.2**
BDC-MW-10A	MW-10A-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.7**	1 U	--	**1.5**	1 U	5 U	**6.3**	1 U	2 U	--	5 U	**76**
BDC-MW-10A	MW-10A-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.3**	1 U	--	**1.6**	1 U	5 U	**6.7**	1 U	2 U	--	5 U	**73**
BDC-MW-10A	MW-10A-060221	N	2/21/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.7**	1 U	--	**1.3**	1 U	5 U	**9.6**	1 U	2 U	--	5 U	**150**
BDC-MW-10A	MW-10A-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	**1.3**	1 U	5 U	**3.7**	1 U	2 U	--	5 U	**19**
BDC-MW-10A	MW-10A-060816	N	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U	5 U	**1.6**	1 U	2 U	--	5 U	**20**
BDC-MW-10A	MW-10A-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**9.2**
BDC-MW-10A	DC-MW10A-070222	N	2/22/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.2**	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**35**
BDC-MW-10A	MW-10A-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	**1.1**	1 U	5 U	1 U	1 U	2 U	--	5 U	**44**
BDC-MW-10A	DC-MW10A-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.2**	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**78**
BDC-MW-10A	MW-10A-080519	N	5/19/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.1**	1 U	5 U	1 U	1 U	2 U	--	5 U	**180**
BDC-MW-10A	MW-10A-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**5**
BDC-MW-10A	MW-10A-090518	N	5/18/2009	--	2 U	2 U	10 U	2 U	4 U	2 U	4 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	10 U	2 U	2 U	4 U	--	10 U	2 U
BDC-MW-10A	MW-10A-091116	N	11/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.1**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-10A	MW-10A-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-10A	MW-10A-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-10A	MW-10A-110503	N	5/3/2011	--	2 U	2 U	5 U	2 U	4 U	10 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	10 U	2 U	2 U	2 U	--	10 U	2 U
BDC-MW-10A	MW-10A-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	--	**0.3**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**0.4**
BDC-MW-10A	MW-10A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.2**	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.4**
BDC-MW-10A	MW-10A-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.4**
BDC-MW-10A	MW-10A-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.3**
BDC-MW-10A	MW-10A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.4**
BDC-MW-10A	MW-10A-140507	N	5/7/2014	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	--	1 U	1 U	25 UJ	1 U	2.5 U	2.5 U	--	2.5 U	1 U
BDC-MW-10A	MW-10A-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.3**
BDC-MW-10C	10C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.4 J**	ND	ND	--	--	--	ND	--	--	--	--	**8.3 J**
BDC-MW-10C	MW-10C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--	--	**13**	--	--	--	--	ND
BDC-MW-10C	MW-10C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.9**	--	--	--	--	--	**3.9**	--	--	--	--	**39**
BDC-MW-10C	MW-10C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**28.29**
BDC-MW-10C	MW-10C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**33.16**
BDC-MW-10C	MW-10C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**40.41**
BDC-MW-10C	MW-10C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	**14.27**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**18.69**
BDC-MW-10C	MW-10C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**30.5**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**11.6**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-10C	MW-10C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-10C	MW-10C-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	**1.1**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-DUP-020606	FD	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-041019	N	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-050511	N	5/11/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-10C	MW-10C-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	DC-MW10C-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-10C	DC-MWDUP1-071129	FD	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-10C	MW-10C-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-10C	MW-10C-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**230**	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-091116	N	11/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-10C	MW-10C-110503	N	5/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 UJ
BDC-MW-10C	MW-10C-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-10C	MW-10C-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-10C	MW-10C-961101	N	11/1/1996	--	--	--	--	--	--	**1.4**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-10C	MW-10C-970201	N	2/1/1997	--	--	--	--	--	--	**1.5**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-10C	MW-10C-970501	N	5/1/1997	--	--	--	--	--	--	**1.4**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-10C	MW-10C-970801	N	8/1/1997	--	--	--	--	--	--	**1.2**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-10C	MW-10C-971101	N	11/1/1997	--	--	--	--	--	--	**1.3**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-10C	MW-10C-980601	N	6/1/1998	--	--	--	--	--	--	**1.3**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-10C	MW-10C-981019	N	10/19/1998	1 U	1 U	1 U	**3**	5 U	5 U	**1.1**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.1**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.4**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.23**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	**1.3**	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.7**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-DUP-020606	FD	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.6**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.3**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**14**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.2**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.3**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-041019	N	10/19/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.4**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-050511	N	5/11/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.9**	0.2 U	--	0.2 U	0.2 U
BDC-MW-10C	MW-10C-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.7**	1 U	--	1 U	1 U
BDC-MW-10C	DC-MW10C-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**7.2**	1.0 U	--	1.0 U	1.0 U
BDC-MW-10C	DC-MWDUP1-071129	FD	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**6.8**	1.0 U	--	1.0 U	1.0 U
BDC-MW-10C	MW-10C-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**15**	0.2 U	--	0.2 U	0.2 U
BDC-MW-10C	MW-10C-081124	N	11/24/2008	1 U	1 U	5 U	**52**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**8.5**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-091116	N	11/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.5**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-110503	N	5/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.8**	1 U	--	1 U	1 U
BDC-MW-10C	MW-10C-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**3.7**	0.2 U	--	0.2 U	0.2 U
BDC-MW-10C	MW-10C-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**5.4**	0.2 U	--	0.5 U	0.5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-10C	MW-10C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	**6.3**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**10.1**
BDC-MW-10C	MW-10C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	**56.1**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**9**
BDC-MW-10C	MW-10C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	**6.4**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-10C	MW-10C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	**7.6**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**4.3**
BDC-MW-10C	MW-10C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**5.8**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**3.8**
BDC-MW-10C	MW-10C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.7**
BDC-MW-10C	MW-10C-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	**1.6**
BDC-MW-10C	MW-10C-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**3.8**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**2.8**
BDC-MW-10C	MW-10C-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**4.7**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.4**
BDC-MW-10C	MW-10C-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**2.7**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**2.1**
BDC-MW-10C	MW-10C-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**5.77**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-10C	MW-10C-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-10C	MW-10C-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**36**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-10C	MW-10C-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	**5**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**8.4**
BDC-MW-10C	MW-10C-DUP-020606	FD	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	**6**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**7.8**
BDC-MW-10C	MW-10C-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**15**
BDC-MW-10C	MW-10C-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**15**
BDC-MW-10C	MW-10C-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**8.8**
BDC-MW-10C	MW-10C-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**9.4**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**4**
BDC-MW-10C	MW-10C-041019	N	10/19/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**11**
BDC-MW-10C	MW-10C-050511	N	5/11/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.9**
BDC-MW-10C	MW-10C-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1**
BDC-MW-10C	MW-10C-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**
BDC-MW-10C	MW-10C-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**2.6**
BDC-MW-10C	MW-10C-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**5.8**
BDC-MW-10C	DC-MW10C-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**5.6**
BDC-MW-10C	DC-MWDUP1-071129	FD	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	--	1.0 U	1.0 U	5.0 U	--	1.0 U	--	--	5.0 U	**5.9**
BDC-MW-10C	MW-10C-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.4**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**6.9**
BDC-MW-10C	MW-10C-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**7.5**
BDC-MW-10C	MW-10C-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**100**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-10C	MW-10C-091116	N	11/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**39**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-10C	MW-10C-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**12**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-10C	MW-10C-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	**4.4**
BDC-MW-10C	MW-10C-110503	N	5/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**4.7**
BDC-MW-10C	MW-10C-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.2**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**4.3**
BDC-MW-10C	MW-10C-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**4**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Choronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-10C	MW-10C-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	MW-10C-130521	N	5/21/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	MW-10C-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	MW-10C-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	MW-10C-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	MW-10C-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	MW-10C-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-10C	MW-10C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-10C	MW-10C-161101	N	11/1/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-10C	MW-10C-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-10C	MW-10C-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-10C	MW-10C-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-10C	MW-10C-181105	N	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 UJ	--	--	0.20 U	5.00 U
BDC-MW-10C	MW-10C-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-10C	MW-10C-191107	N	11/7/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-11A	11A1-890801	N	8/1/1989	--	--	--	--	--	**0.5 J**	**0.9 J**	--	--	--	--	--	--	--	--	--	**63**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**43**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-11A	MW-11A-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
Sample Location	Sample ID	Sample Type	Sample Date	4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-10C	MW-10C-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**6.1**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**3.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-140507	N	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**5.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**2.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**2.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**1**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-MW-10C	MW-10C-161101	N	11/1/2016	0.5 U	0.5 U	5 UJ	5 U	25 UJ	5 U	**0.3**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	**0.2**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	**0.3**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-10C	MW-10C-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	**5.76**	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.55**	0.20 U	--	0.20 U	0.20 U
BDC-MW-10C	MW-10C-181105	N	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	**0.39**	0.20 U	--	0.20 U	0.20 U
BDC-MW-10C	MW-10C-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.53**	0.20 U	--	0.20 U	0.20 U
BDC-MW-10C	MW-10C-191107	N	11/7/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.50**	0.20 U	--	0.20 U	0.20 U
BDC-MW-11A	11A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**43**	--	--	--	--
BDC-MW-11A	MW-11A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**54**	--	--	--	--
BDC-MW-11A	MW-11A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**15.86**	--	--	--	--
BDC-MW-11A	MW-11A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**10.82**	--	--	--	--
BDC-MW-11A	MW-11A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**7.17 J**	--	--	--	--
BDC-MW-11A	MW-11A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**10.27**	--	--	--	--
BDC-MW-11A	MW-11A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**9.3**	--	--	--	--
BDC-MW-11A	MW-11A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.4**	--	--	--	--
BDC-MW-11A	MW-11A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**4.9**	--	--	--	--
BDC-MW-11A	MW-11A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.6**	--	--	--	--
BDC-MW-11A	MW-11A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.1**	--	--	--	--
BDC-MW-11A	MW-11A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--
BDC-MW-11A	MW-11A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
BDC-MW-11A	MW-11A-981019	N	10/19/1998	1 U	1 U	1 U	**2.7**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.55**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.27 J**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-10C	MW-10C-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.4**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**4.4**
BDC-MW-10C	MW-10C-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.4**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**4.5**
BDC-MW-10C	MW-10C-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.4**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**3.7**
BDC-MW-10C	MW-10C-140507	N	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.9**
BDC-MW-10C	MW-10C-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.5**
BDC-MW-10C	MW-10C-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**10**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.7**
BDC-MW-10C	MW-10C-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.1**
BDC-MW-10C	MW-10C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-MW-10C	MW-10C-161101	N	11/1/2016	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**8.8**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.8**	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-10C	MW-10C-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**7.7**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**1.3**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 UJ	**0.2 J**
BDC-MW-10C	MW-10C-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**8.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**1.1**	--	0.2 U	0.2 U	5.0 U	0.2 U	0.5 U	--	--	0.5 U	**0.2**
BDC-MW-10C	MW-10C-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	**4.27**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.25**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.39**
BDC-MW-10C	MW-10C-181105	N	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**3.32**	**1.18**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 UJ	0.20 U	0.20 U	--	--	0.20 UJ	**0.22**
BDC-MW-10C	MW-10C-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.46**
BDC-MW-10C	MW-10C-191107	N	11/7/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 UJ	0.20 U	0.20 U	--	--	0.20 U	**0.68**
BDC-MW-11A	11A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5 J**	ND	ND	--	--	--	**15**	--	--	--	--	**7.2 J**
BDC-MW-11A	MW-11A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**13**	--	--	--	--	**13**
BDC-MW-11A	MW-11A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.2**	--	--	--	--	--	**7.0**	--	--	--	--	**39**
BDC-MW-11A	MW-11A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**2.41**	--	--	--	--	**26.8**
BDC-MW-11A	MW-11A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**8.37 J**
BDC-MW-11A	MW-11A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**12.14**
BDC-MW-11A	MW-11A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**2.54**	--	--	--	--	**14.04**
BDC-MW-11A	MW-11A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.9**	--	--	--	--	**3.8**
BDC-MW-11A	MW-11A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**1**	--	--	--	--	**1.8**
BDC-MW-11A	MW-11A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-11A	MW-11A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-11A	MW-11A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.2**	--	--	--	--	1 U
BDC-MW-11A	MW-11A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.6**	--	--	--	--	**3.4**
BDC-MW-11A	MW-11A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U
BDC-MW-11A	MW-11A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	**1.03**	1 U	--	--	--	1 U
BDC-MW-11A	MW-11A-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.1**
BDC-MW-11A	MW-11A-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-11A	MW-11A-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**5.1**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-11A	MW-11A-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-11A	MW-11A-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-11A	MW-11A-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-11A	MW-11A-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-060516	N	5/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-061126	N	11/26/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-071127	N	11/27/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**0.3**	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-11A	MW-11A-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-100519	N	5/19/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-101108	N	11/8/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-11A	MW-11A-110503	N	5/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 UJ
BDC-MW-11A	MW-11A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**0.2**	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-11A	MW-11A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	**0.3**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-11A	MW-11A-121114	N	11/14/2012	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-11A	MW-11A-130521	N	5/21/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-11A	MW-11A-131112	N	11/12/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-11A	MW-11A-140507	N	5/7/2014	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-11A	MW-11A-141104	N	11/4/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-11A	MW-11A-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-11A	MW-11A-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-11A	MW-11A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-11A	MW-11A-161101	N	11/1/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-11A	BDC-DUP1-161101	FD	11/1/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-11A	MW-11A-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-11A	BDC-DUP1-170502	FD	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-11A	MW-11A-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-11A	BDC-DUP1-171108	FD	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-11A	MW-11A-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-11A	MW-11A-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**12**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**17**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**18**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**21**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-041025	N	10/25/2004	1 U	1 U	5 U	**9.9**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**22**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-060516	N	5/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**20**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-061126	N	11/26/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**24**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**26**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-071127	N	11/27/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**27**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**26**	0.2 U	--	0.2 U	0.2 U
BDC-MW-11A	MW-11A-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**33**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**26**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-091117	N	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	**30**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-100519	N	5/19/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**26**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-101108	N	11/8/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**22**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-110503	N	5/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**22**	1 U	--	1 U	1 U
BDC-MW-11A	MW-11A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**23**	0.2 U	--	0.2 U	0.2 U
BDC-MW-11A	MW-11A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**24**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	MW-11A-121114	N	11/14/2012	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	**25**	2 U	--	5 U	5 U
BDC-MW-11A	MW-11A-130521	N	5/21/2013	5 U	5 U	50 U	50 U	250 UJ	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	**22**	2 U	--	5 U	5 U
BDC-MW-11A	MW-11A-131112	N	11/12/2013	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	**24**	2 U	--	5 U	5 U
BDC-MW-11A	MW-11A-140507	N	5/7/2014	5 U	5 U	50 U	50 U	250 UJ	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	**19**	2 U	--	5 U	5 U
BDC-MW-11A	MW-11A-141104	N	11/4/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**24**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	MW-11A-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**21**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	MW-11A-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**19**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	MW-11A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--
BDC-MW-11A	MW-11A-161101	N	11/1/2016	0.5 U	0.5 U	5 UJ	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**15**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	BDC-DUP1-161101	FD	11/1/2016	0.5 U	0.5 U	5 UJ	5 UJ	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**16**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	MW-11A-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**18**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	BDC-DUP1-170502	FD	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**18**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	MW-11A-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**21**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	BDC-DUP1-171108	FD	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**19**	0.2 U	--	0.5 U	0.5 U
BDC-MW-11A	MW-11A-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	**6.56**	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**11.8**	0.20 U	--	0.20 U	0.20 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-11A	MW-11A-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.9**	1 U	2.0 U	--	5 U	1 U
BDC-MW-11A	MW-11A-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2.2**	1 U	2.0 U	--	5 U	1 U
BDC-MW-11A	MW-11A-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2.2**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2.8**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2.1**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**2**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-060516	N	5/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.1**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-061126	N	11/26/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.5**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.5**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-071127	N	11/27/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.1**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.8**	0.2 U	1 U	**1.2**	0.2 U	0.2 U	--	1 U	**0.2**
BDC-MW-11A	MW-11A-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1**	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-100519	N	5/19/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.1**	1 U	2 U	--	5 UJ	1 U
BDC-MW-11A	MW-11A-101108	N	11/8/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-110503	N	5/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-11A	MW-11A-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.7**	0.2 U	1 U	**0.5**	0.2 U	0.2 U	--	1 U	**0.4**
BDC-MW-11A	MW-11A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.9**	0.2 U	5 U	**0.7**	0.5 U	0.5 U	--	0.5 U	**0.4**
BDC-MW-11A	MW-11A-121114	N	11/14/2012	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-11A	MW-11A-130521	N	5/21/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 UJ	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-11A	MW-11A-131112	N	11/12/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-11A	MW-11A-140507	N	5/7/2014	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 UJ	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-11A	MW-11A-141104	N	11/4/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**1**	0.2 U	5 U	**0.4**	0.5 U	0.5 U	--	0.5 U	**0.4**
BDC-MW-11A	MW-11A-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.7**	0.2 U	5 U	**0.5**	0.5 U	0.5 U	--	0.5 U	**0.3**
BDC-MW-11A	MW-11A-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.2**	0.2 U	--	**0.8**	0.2 U	5 UJ	**0.2**	0.5 U	0.5 U	--	0.5 U	**0.4**
BDC-MW-11A	MW-11A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.3**	--	--	--	--	**0.4**
BDC-MW-11A	MW-11A-161101	N	11/1/2016	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.6**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.5**
BDC-MW-11A	BDC-DUP1-161101	FD	11/1/2016	--	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	**2.2 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.6**	0.2 U	5 UJ	**0.2**	0.5 U	0.5 U	--	0.5 U	**0.5**
BDC-MW-11A	MW-11A-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.6**	0.2 U	5 U	**0.4**	0.5 U	0.5 U	--	0.5 U	**0.6**
BDC-MW-11A	BDC-DUP1-170502	FD	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.7**	0.2 U	5 U	**0.4**	0.5 U	0.5 U	--	0.5 UJ	**0.6 J**
BDC-MW-11A	MW-11A-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.8**	0.2 U	5.0 U	**0.2**	0.5 U	--	--	0.5 U	**0.5**
BDC-MW-11A	BDC-DUP1-171108	FD	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.7**	0.2 U	5.0 U	**0.2**	0.5 U	--	--	0.5 U	**0.4**
BDC-MW-11A	MW-11A-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.26**	0.20 U	--	**0.35**	0.20 U	1.00 U	**0.26**	0.20 U	--	--	0.20 U	**0.35**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-11A	MW-11A-181105	N	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 UJ	--	--	0.20 U	5.00 U
BDC-MW-11A	MW-11A-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-11A	MW-11A-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-12A	12A1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**13**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-12A	MW-12A-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-12A	MW-12A-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-060516	N	5/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-061126	N	11/26/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-12A	MW-12A-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-071127	N	11/27/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-11A	MW-11A-181105	N	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	**13.9**	0.20 U	--	0.20 U	0.20 U
BDC-MW-11A	MW-11A-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**10.8**	0.20 U	--	0.20 U	0.20 U
BDC-MW-11A	MW-11A-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**12.5**	0.20 U	--	0.20 U	0.20 U
BDC-MW-12A	12A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-12A	MW-12A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**4.2**	--	--	--	--
BDC-MW-12A	MW-12A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--
BDC-MW-12A	MW-12A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--
BDC-MW-12A	MW-12A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**17.5**	--	--	--	--
BDC-MW-12A	MW-12A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-12A	MW-12A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.09**	--	--	--	--
BDC-MW-12A	MW-12A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**9.5**	--	--	--	--
BDC-MW-12A	MW-12A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.6**	--	--	--	--
BDC-MW-12A	MW-12A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-12A	MW-12A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.1**	--	--	--	--
BDC-MW-12A	MW-12A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**3.7**	--	--	--	--
BDC-MW-12A	MW-12A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**3**	--	--	--	--
BDC-MW-12A	MW-12A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-MW-12A	MW-12A-981020	N	10/20/1998	1 U	1 U	1 U	**3.2**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.03**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**2.07**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.46 J**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**2.2**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.3**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-041025	N	10/25/2004	1 U	1 U	5 U	**6.2**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.4**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.8**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-060516	N	5/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-061126	N	11/26/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**4.4**	0.2 U	--	0.2 U	0.2 U
BDC-MW-12A	MW-12A-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-071127	N	11/27/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.2**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-11A	MW-11A-181105	N	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**6.13**	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.39**	0.20 U	1.00 UJ	0.20 U	0.20 U	--	--	0.20 UJ	**0.40**
BDC-MW-11A	MW-11A-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.28**	0.20 U	1.00 U	**0.21**	0.20 U	0.20 U	--	0.20 U	**0.29**
BDC-MW-11A	MW-11A-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.43**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.42**
BDC-MW-12A	12A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	**5.6**	--	--	--	--	**3.2 J**
BDC-MW-12A	MW-12A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**2.5**	--	--	--	--	ND
BDC-MW-12A	MW-12A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--	--	**5.5**	--	--	--	--	**14**
BDC-MW-12A	MW-12A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.13**	--	--	--	--	1 U
BDC-MW-12A	MW-12A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**17.16**
BDC-MW-12A	MW-12A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-12A	MW-12A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-12A	MW-12A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.7**	--	--	--	--	**2.9**
BDC-MW-12A	MW-12A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.2**	--	--	--	--	**8.6**
BDC-MW-12A	MW-12A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-12A	MW-12A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**9.4**
BDC-MW-12A	MW-12A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**6.7**
BDC-MW-12A	MW-12A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.1**
BDC-MW-12A	MW-12A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.3**
BDC-MW-12A	MW-12A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-12A	MW-12A-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**2.7**
BDC-MW-12A	MW-12A-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.06**
BDC-MW-12A	MW-12A-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-12A	MW-12A-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-12A	MW-12A-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-12A	MW-12A-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-12A	MW-12A-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-12A	MW-12A-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-12A	MW-12A-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-060516	N	5/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-061126	N	11/26/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	**0.7**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-12A	MW-12A-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-071127	N	11/27/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-12A	MW-12A-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-12A	MW-12A-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-100519	N	5/19/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-101108	N	11/8/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-12A	MW-12A-110503	N	5/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 UJ
BDC-MW-12A	MW-12A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-12A	MW-12A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-12A	MW-12A-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-12A	MW-12A-130521	N	5/21/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-12A	MW-12A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-12A	MW-12A-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-12A	MW-12A-141104	N	11/4/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	13A1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	**1.6 J**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-13A	MW-13A-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-12A	MW-12A-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**3.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-12A	MW-12A-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.7**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-091117	N	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	**4.7**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-100519	N	5/19/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-101108	N	11/8/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.3**	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-110503	N	5/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-12A	MW-12A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**3.1**	0.2 U	--	0.2 U	0.2 U
BDC-MW-12A	MW-12A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-12A	MW-12A-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**2.1**	0.2 U	--	0.5 U	0.5 U
BDC-MW-12A	MW-12A-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-12A	MW-12A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**2.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-12A	MW-12A-140507	N	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-12A	MW-12A-141104	N	11/4/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	13A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**1 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-13A	MW-13A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**8.2**	--	--	--	--
BDC-MW-13A	MW-13A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-13A	MW-13A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-13A	MW-13A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--
BDC-MW-13A	MW-13A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13A	MW-13A-981021	N	10/21/1998	1 U	1 U	1 U	**4.8**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-12A	MW-12A-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	**0.6**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-12A	MW-12A-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-100519	N	5/19/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-12A	MW-12A-101108	N	11/8/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-110503	N	5/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-12A	MW-12A-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	**0.6**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-12A	MW-12A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.2**	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-12A	MW-12A-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	**0.4**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-12A	MW-12A-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-12A	MW-12A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	**0.5**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-12A	MW-12A-140507	N	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.3**	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-12A	MW-12A-141104	N	11/4/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.3**	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	13A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.3**	ND	ND	--	--	--	**8.5**	--	--	--	--	ND
BDC-MW-13A	MW-13A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**5.4**	--	--	--	--	ND
BDC-MW-13A	MW-13A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--	--	**31**	--	--	--	--	**12**
BDC-MW-13A	MW-13A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.17**	--	--	--	--	--	**12.23**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-13A	MW-13A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	**9.57 J**	--	--	--	--	5 U
BDC-MW-13A	MW-13A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**6.82**	--	--	--	--	--	**16.52**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**3**	--	--	--	--	--	**3.4**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**2.1**	--	--	--	--	--	**3.4**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**3.2**	--	--	--	--	--	**2**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**2.1**	--	--	--	--	--	**1.5**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.7**	--	--	--	--	--	**2.9**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.5**	--	--	--	--	--	**3**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.6**	--	--	--	--	--	**1.1**	--	--	--	--	1 U
BDC-MW-13A	MW-13A-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.3**	1 U	2 U	1 U	1 U	--	**1.7**	1 U	--	--	--	1 U
BDC-MW-13A	MW-13A-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.8**	1.46 U	--	--	--	1 U
BDC-MW-13A	MW-13A-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**2.3**	1.46 U	--	--	--	1 U
BDC-MW-13A	MW-13A-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.2**	1 U	1 U	1 U	1 U	--	**2.4**	1.46 U	--	--	--	1 U
BDC-MW-13A	MW-13A-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**2.12**	1.46 U	--	--	--	1 U
BDC-MW-13A	MW-13A-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.28 J**	1.46 U	--	--	--	1 U
BDC-MW-13A	MW-13A-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.6**	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-13A	MW-13A-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.7**	1 U	--	1 U	1 U	5 U	**3.4**	1 U	2.0 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-13A	MW-13A-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-031116	N	11/16/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-DUP-050512	FD	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-060516	N	5/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-13A	MW-13A-070521	N	5/21/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-13A	MW-13A-DUP-070521	FD	5/21/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-13A	MW-13A-071128	N	11/28/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-13A	MW-13A-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-13A	MW-13A-111103	N	11/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13A	MW-13A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-121113	N	11/13/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-130521	N	5/21/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-DUP-140507	FD	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-141104	N	11/4/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-151027	N	10/27/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 UJ	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-DUP-151027	FD	10/27/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 UJ	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13A	MW-13A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-DUP-160419	FD	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-161101	N	11/1/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-13A	MW-13A-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-13A	MW-13A-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-031116	N	11/16/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-041025	N	10/25/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-DUP-050512	FD	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-060516	N	5/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-13A	MW-13A-070521	N	5/21/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	**0.4**	0.2 U	--	0.2 U	0.2 U
BDC-MW-13A	MW-13A-DUP-070521	FD	5/21/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-13A	MW-13A-071128	N	11/28/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.6**	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-13A	MW-13A-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-091117	N	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-111103	N	11/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13A	MW-13A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-13A	MW-13A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.8**	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-121113	N	11/13/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.5**	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.3**	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.6**	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-140507	N	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.5**	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-DUP-140507	FD	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.5**	0.5 UJ	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-141104	N	11/4/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.4**	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-151027	N	10/27/2015	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**2.3**	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-DUP-151027	FD	10/27/2015	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**2.4**	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-MW-13A	MW-DUP-160419	FD	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-MW-13A	MW-13A-161101	N	11/1/2016	0.5 U	0.5 U	5 UJ	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.3**	0.5 UJ	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-13A	MW-13A-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U	5 U	**3.3**	1 U	2.0 U	--	5 U	1 U
BDC-MW-13A	MW-13A-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.4**	1 U	--	1 U	1 U	5 U	**3.9**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-031116	N	11/16/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3**	1 U	--	1 U	1 U	5 U	**3.8**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.1**	1 U	--	1 U	1 U	5 U	**4.6**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.3**	1 U	--	1 U	1 U	5 U	**4**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.1**	1 U	--	1 U	1 U	5 U	**4.6**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-DUP-050512	FD	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.2**	1 U	--	1 U	1 U	5 U	**4.7**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6**	1 U	--	1 U	1 U	5 U	**4.5**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-060516	N	5/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.1**	1 U	--	1 U	1 U	5 U	**4.6**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**8.3**	0.2 U	--	0.2 U	0.2 U	1 U	**6.5**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-13A	MW-13A-070521	N	5/21/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**8.2**	0.2 U	--	0.2 U	0.2 U	1 U	**7**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-13A	MW-13A-DUP-070521	FD	5/21/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**7.8**	0.2 U	--	0.2 U	0.2 U	1 U	**6.8**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-13A	MW-13A-071128	N	11/28/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.4**	1 U	--	1 U	1 U	5 U	**4.2**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**8.7**	0.2 U	--	0.2 U	0.2 U	1 U	**6.8**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-13A	MW-13A-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.5**	1 U	--	1 U	1 U	5 U	**3.7**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.7**	1 U	--	1 U	1 U	5 U	**5.6**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.2**	1 U	--	1 U	1 U	5 U	**6**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.4**	1 U	--	1 U	1 U	5 U	**5.3**	1 U	2 U	--	5 UJ	1 U
BDC-MW-13A	MW-13A-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.6**	1 U	--	1 U	1 U	5 UJ	**2.8**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-110504	N	5/4/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.9**	1 U	--	1 U	1 U	5 U	**2.4**	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-111103	N	11/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-13A	MW-13A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13A	MW-13A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.3**	0.2 U	--	0.2 U	0.2 U	5 U	**0.8**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-121113	N	11/13/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.2**	0.2 U	--	0.2 U	0.2 U	5 U	**0.8**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**4.5**	0.2 U	--	0.2 U	0.2 U	5 UJ	**2.5**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.2**	0.2 U	--	0.2 U	0.2 U	5 U	**0.6**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-140507	N	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.1**	0.2 U	--	0.2 U	0.2 U	5 UJ	**1.3**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-DUP-140507	FD	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.4**	0.2 U	--	0.2 U	0.2 U	5 U	**1.3**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-141104	N	11/4/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.3**	0.2 U	--	0.2 U	0.2 U	5 U	**0.5**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.8**	0.2 U	--	0.2 U	0.2 U	5 U	**0.4**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-151027	N	10/27/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.5**	0.2 U	--	0.2 U	0.2 U	5 UJ	**0.3**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-DUP-151027	FD	10/27/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.6**	0.2 U	--	0.2 U	0.2 U	5 UJ	**0.3**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-MW-13A	MW-DUP-160419	FD	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--	--	**0.3**	--	--	--	--	0.2 U
BDC-MW-13A	MW-13A-161101	N	11/1/2016	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.3**	0.2 U	--	0.2 U	0.2 U	5 UJ	**0.7**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.1**	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-13A	MW-13A-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-13A	MW-13A-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-13A	MW-13A-181105	N	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 UJ	--	--	0.20 U	5.00 U
BDC-MW-13A	MW-13A-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-13A	MW-13A-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-13C	13C1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.2 J**	--	--	--	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**40**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-13C	MW-13C-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	**1.1**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-DUP-020610	FD	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-031116	N	11/16/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**32**	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-060516	N	5/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-13A	MW-13A-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13A	MW-13A-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-13A	MW-13A-181105	N	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-13A	MW-13A-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-13A	MW-13A-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-13C	13C1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-910201	N	2/1/1991	--	--	--	--	--	--	**0.6**	--	--	--	--	--	--	--	--	--	--	--	--	**40**	--	--	--	--
BDC-MW-13C	MW-13C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--
BDC-MW-13C	MW-13C-950501	N	5/1/1995	--	--	--	--	--	--	**4.88**	--	--	--	--	--	--	--	--	--	--	--	--	**1.14**	--	--	--	--
BDC-MW-13C	MW-13C-951001	N	10/1/1995	--	--	--	--	--	--	**69.66**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-13C	MW-13C-960201	N	2/1/1996	--	--	--	--	--	--	**33.56**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-13C	MW-13C-960501	N	5/1/1996	--	--	--	--	--	--	**25.76**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13C	MW-13C-960801	N	8/1/1996	--	--	--	--	--	--	**75**	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-MW-13C	MW-13C-961101	N	11/1/1996	--	--	--	--	--	--	**34.1**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13C	MW-13C-970201	N	2/1/1997	--	--	--	--	--	--	**36.5**	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-MW-13C	MW-13C-970501	N	5/1/1997	--	--	--	--	--	--	**20.5**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13C	MW-13C-970801	N	8/1/1997	--	--	--	--	--	--	**7.6**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13C	MW-13C-971101	N	11/1/1997	--	--	--	--	--	--	**6.8**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13C	MW-13C-980601	N	6/1/1998	--	--	--	--	--	--	**3.9**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-13C	MW-13C-981021	N	10/21/1998	1 U	1 U	1 U	**4.3**	5 U	5 U	**3.3**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**3**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2.31**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.16 J**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-DUP-020610	FD	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	**3.6**	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	**6.9**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-031116	N	11/16/2003	1 U	1 U	5 U	5 U	50 U	1 U	**2.7**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	**4.2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-041025	N	10/25/2004	1 U	1 U	5 U	**8.8**	50 U	1 U	**1.3**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-050512	N	5/12/2005	1 U	1 U	5 U	7.7 U	50 U	5 U	**1.9**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	**3**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-060516	N	5/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	**2.1**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-13A	MW-13A-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.6**	0.2 U	--	0.2 U	0.2 U	5.0 U	**0.3**	0.5 U	--	--	0.5 U	0.2 U
BDC-MW-13A	MW-13A-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**1.45**	0.20 U	--	0.20 U	0.20 U	1.00 U	**0.43**	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-13A	MW-13A-181105	N	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**6.06**	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**1.91**	0.20 U	--	0.20 U	0.20 U	1.00 UJ	**0.58**	0.20 U	--	--	0.20 UJ	0.20 U
BDC-MW-13A	MW-13A-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**1.03**	0.20 U	--	0.20 U	0.20 U	1.00 U	**0.22**	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-13A	MW-13A-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**1.19**	0.20 U	--	0.20 U	0.20 U	1.00 U	**0.35**	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-13C	13C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	ND	--	--	--	--	**240**
BDC-MW-13C	MW-13C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.1**	--	--	--	--	--	**9.2**	--	--	--	--	**220**
BDC-MW-13C	MW-13C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.1**	--	--	--	--	--	1 U	--	--	--	--	**760**
BDC-MW-13C	MW-13C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**3.03**
BDC-MW-13C	MW-13C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-13C	MW-13C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**15.24**
BDC-MW-13C	MW-13C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**11.48**
BDC-MW-13C	MW-13C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**3.6**
BDC-MW-13C	MW-13C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.9**
BDC-MW-13C	MW-13C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.5**
BDC-MW-13C	MW-13C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.2**
BDC-MW-13C	MW-13C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-13C	MW-13C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-13C	MW-13C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1**
BDC-MW-13C	MW-13C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	**1.6**
BDC-MW-13C	MW-13C-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.8**
BDC-MW-13C	MW-13C-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-13C	MW-13C-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-13C	MW-13C-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-13C	MW-13C-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-13C	MW-13C-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-13C	MW-13C-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**1.6**
BDC-MW-13C	MW-13C-DUP-020610	FD	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**1.9**
BDC-MW-13C	MW-13C-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**3.3**
BDC-MW-13C	MW-13C-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**4.9**
BDC-MW-13C	MW-13C-031116	N	11/16/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**
BDC-MW-13C	MW-13C-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.5**
BDC-MW-13C	MW-13C-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.3**
BDC-MW-13C	MW-13C-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-13C	MW-13C-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.8**
BDC-MW-13C	MW-13C-060516	N	5/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-13C	MW-13C-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-13C	MW-13C-070521	N	5/21/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.4**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-13C	MW-13C-071128	N	11/28/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.8**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-13C	MW-13C-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-13C	MW-13C-111103	N	11/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-13C	MW-13C-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**0.8**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13C	MW-13C-121113	N	11/13/2012	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-13C	MW-13C-130521	N	5/21/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-13C	MW-13C-131112	N	11/12/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-13C	MW-13C-140507	N	5/7/2014	2.5 U	2.5 U	1 U	1 U	--	2.5 U	1 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	--	2.5 U	1 U	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	--	--	2.5 U	25 U
BDC-MW-13C	MW-13C-141104	N	11/4/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13C	MW-13C-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13C	MW-13C-151027	N	10/27/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 UJ	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-13C	MW-13C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-13C	MW-13C-161101	N	11/1/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-13C	MW-13C-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-13C	MW-13C-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	**0.5**	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-13C	MW-13C-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	**0.24**	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-13C	MW-13C-181105	N	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	**0.32**	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 UJ	--	--	0.20 U	5.00 U
BDC-MW-13C	MW-13C-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-13C	MW-13C-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-14A	14A1-890801	N	8/1/1989	--	--	--	--	--	ND	**1.1 J**	--	--	--	--	--	--	--	--	--	--	**340**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**92**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-13C	MW-13C-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**2.1**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.8**	0.2 U	--	0.2 U	0.2 U
BDC-MW-13C	MW-13C-070521	N	5/21/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**1.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.8**	0.2 U	--	0.2 U	0.2 U
BDC-MW-13C	MW-13C-071128	N	11/28/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-13C	MW-13C-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-091117	N	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-111103	N	11/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-13C	MW-13C-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13C	MW-13C-121113	N	11/13/2012	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-13C	MW-13C-130521	N	5/21/2013	5 U	5 U	50 U	50 U	250 UJ	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-13C	MW-13C-131112	N	11/12/2013	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-13C	MW-13C-140507	N	5/7/2014	2.5 U	2.5 U	25 U	25 U	130 UJ	25 U	1 U	2.5 U	2.5 U	2.5 U	--	2.5 U	2.5 U	2.5 UJ	1 U	2.5 U	2.5 U	1 U	2.5 UJ	1 U	1 U	--	2.5 U	2.5 U
BDC-MW-13C	MW-13C-141104	N	11/4/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13C	MW-13C-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13C	MW-13C-151027	N	10/27/2015	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13C	MW-13C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-MW-13C	MW-13C-161101	N	11/1/2016	0.5 U	0.5 U	5 UJ	5 UJ	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13C	MW-13C-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13C	MW-13C-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-13C	MW-13C-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	**6.91**	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-13C	MW-13C-181105	N	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-13C	MW-13C-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-13C	MW-13C-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-14A	14A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**92**	--	--	--	--
BDC-MW-14A	MW-14A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**590**	--	--	--	--
BDC-MW-14A	MW-14A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**15.5**	--	--	--	--
BDC-MW-14A	MW-14A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**9.83 J**	--	--	--	--
BDC-MW-14A	MW-14A-960201	N	2/1/1996	--	--	--	--	--	--	20 U	--	--	--	--	--	--	--	--	--	--	--	--	**294.36**	--	--	--	--
BDC-MW-14A	MW-14A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**115.94**	--	--	--	--
BDC-MW-14A	MW-14A-960801	N	8/1/1996	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**249**	--	--	--	--
BDC-MW-14A	MW-14A-961101	N	11/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**114**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-13C	MW-13C-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**16**	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**3.4**
BDC-MW-13C	MW-13C-070521	N	5/21/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**16**	0.2 U	0.2 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.2**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**4.4**
BDC-MW-13C	MW-13C-071128	N	11/28/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2**
BDC-MW-13C	MW-13C-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	**0.5**	0.2 U	0.2 U	**0.7**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.4**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**0.6**
BDC-MW-13C	MW-13C-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**
BDC-MW-13C	MW-13C-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-13C	MW-13C-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-13C	MW-13C-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**22**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-13C	MW-13C-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**6.5**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-13C	MW-13C-110504	N	5/4/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-13C	MW-13C-111103	N	11/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-13C	MW-13C-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.3**
BDC-MW-13C	MW-13C-121113	N	11/13/2012	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-13C	MW-13C-130521	N	5/21/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 UJ	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-13C	MW-13C-131112	N	11/12/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-13C	MW-13C-140507	N	5/7/2014	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	--	1 U	1 U	25 U	1 U	2.5 U	2.5 U	--	2.5 U	1 U
BDC-MW-13C	MW-13C-141104	N	11/4/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.2**
BDC-MW-13C	MW-13C-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.3**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.3**
BDC-MW-13C	MW-13C-151027	N	10/27/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.2**
BDC-MW-13C	MW-13C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-MW-13C	MW-13C-161101	N	11/1/2016	--	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.2**
BDC-MW-13C	MW-13C-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**14**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.5**	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 UJ	**0.3 J**
BDC-MW-13C	MW-13C-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**31**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5.0 U	0.2 U	0.5 U	--	--	0.5 U	**0.3**
BDC-MW-13C	MW-13C-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	**25.1**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.28**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.25**
BDC-MW-13C	MW-13C-181105	N	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**5.71**	**5.54**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.22**	0.20 U	1.00 UJ	0.20 U	0.20 U	--	--	0.20 UJ	0.20 U
BDC-MW-13C	MW-13C-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	**0.53**	**3.08**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.27**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.22**
BDC-MW-13C	MW-13C-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.25**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-14A	14A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**220**	ND	ND	--	--	--	**130**	--	--	--	--	**24**
BDC-MW-14A	MW-14A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**74**	--	--	--	--	--	**66**	--	--	--	--	**28**
BDC-MW-14A	MW-14A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**410**	--	--	--	--	--	**600**	--	--	--	--	**170**
BDC-MW-14A	MW-14A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.42**	--	--	--	--	--	**6.25**	--	--	--	--	**11.38**
BDC-MW-14A	MW-14A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**30.32**
BDC-MW-14A	MW-14A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**133.57**	--	--	--	--	--	**151.58**	--	--	--	--	**44.4**
BDC-MW-14A	MW-14A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**96.06**	--	--	--	--	--	**146.72**	--	--	--	--	**36.4**
BDC-MW-14A	MW-14A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	**11.2**	--	--	--	--	--	**84.1**	--	--	--	--	**339**
BDC-MW-14A	MW-14A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--	5 U	--	--	--	--	--	**2.8**	--	--	--	--	**232**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14A	MW-14A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14A	MW-14A-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-14A	MW-14A-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-991119	N	11/19/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	**1.33 J**	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-DUP-011205	FD	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-031118	N	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-040504	N	5/4/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-040823	N	8/23/2004	1 U	1 U	1 U	1 U	--	1 U	**3.7**	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-041019	N	10/19/2004	5 U	5 U	5 U	5 U	--	5 U	**9.6**	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-14A	MW-14A-050221	N	2/21/2005	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-14A	MW-14A-050516	N	5/16/2005	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	**6400**	50 U	--	10 U	50 U
BDC-MW-14A	MW-14A-050822	N	8/22/2005	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	**5700**	50 U	--	10 U	50 U
BDC-MW-14A	MW-14A-051115	N	11/15/2005	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	6 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	3 U	3 U	3 U	**870**	15 U	--	3 U	15 U
BDC-MW-14A	MW-14A-060221	N	2/21/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**37 J**	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-DUP-060221	FD	2/21/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**16 J**	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-060517	N	5/17/2006	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	10 U	4 U	10 U	2 U	10 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	**25**	10 U	--	2 U	10 U
BDC-MW-14A	MW-14A-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**5.8**	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-DUP-060816	FD	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-061129	N	11/29/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	1 U	2.5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	2.5 U	--	1 U	15 U
BDC-MW-14A	DC-MW14A-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-14A	MW-14A-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	DC-MW14A-071203	N	12/3/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-14A	MW-14A-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-090520	N	5/20/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-14A	MW-14A-970201	N	2/1/1997	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.4**	--	--	--	--
BDC-MW-14A	MW-14A-970501	N	5/1/1997	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**24.2**	--	--	--	--
BDC-MW-14A	MW-14A-970801	N	8/1/1997	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**18.3**	--	--	--	--
BDC-MW-14A	MW-14A-971101	N	11/1/1997	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**9.5**	--	--	--	--
BDC-MW-14A	MW-14A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**4.9**	--	--	--	--
BDC-MW-14A	MW-14A-981021	N	10/21/1998	1 U	1 U	1 U	**5.1**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.7**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**7**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-991119	N	11/19/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**3.2**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**3.8**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-011205	N	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-DUP-011205	FD	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.2**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**23**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-031118	N	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**170**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-040504	N	5/4/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**140**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-040823	N	8/23/2004	1 U	1 U	5 U	14 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**560**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-041019	N	10/19/2004	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**1200**	5 U	--	5 U	5 U
BDC-MW-14A	MW-14A-050221	N	2/21/2005	5 U	5 U	25 U	25 U	250 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**300**	5 U	--	5 U	5 U
BDC-MW-14A	MW-14A-050516	N	5/16/2005	10 U	10 U	50 U	**590**	500 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-14A	MW-14A-050822	N	8/22/2005	10 U	10 U	50 U	**1000**	500 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-14A	MW-14A-051115	N	11/15/2005	3 U	3 U	**30**	**1000**	150 U	15 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	**6**	3 U	--	3 U	3 U
BDC-MW-14A	MW-14A-060221	N	2/21/2006	1 U	1 U	5 U	**290**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-DUP-060221	FD	2/21/2006	1 U	1 U	5 U	**270**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-060517	N	5/17/2006	2 U	2 U	10 U	**660**	100 U	10 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	**2.1**	2 U	--	2 U	2 U
BDC-MW-14A	MW-14A-060816	N	8/16/2006	1 U	1 U	5 U	**140**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-DUP-060816	FD	8/16/2006	1 U	1 U	5 U	**120**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-061129	N	11/29/2006	1 U	1 U	5 U	**180**	25 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	DC-MW14A-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	**34**	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-14A	MW-14A-070523	N	5/23/2007	1 U	1 U	5 U	**14**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-14A	DC-MW14A-071203	N	12/3/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.6**	1.0 U	--	1.0 U	1.0 U
BDC-MW-14A	MW-14A-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-081124	N	11/24/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-090520	N	5/20/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14A	MW-14A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	4 U	--	--	--	--	--	--	4 U	--	--	--	--	--	4 U	--	--	--	--	**162**
BDC-MW-14A	MW-14A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**270**
BDC-MW-14A	MW-14A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**158**
BDC-MW-14A	MW-14A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**70**
BDC-MW-14A	MW-14A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**29.1**
BDC-MW-14A	MW-14A-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	**13.74**
BDC-MW-14A	MW-14A-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**150**	1 U	1 U	--	1 U	1 U	1 U	1 U	**1.5**	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**58.2**
BDC-MW-14A	MW-14A-991119	N	11/19/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**4.8**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**20.9**
BDC-MW-14A	MW-14A-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**235**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**19.7**
BDC-MW-14A	MW-14A-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**113.23**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14A	MW-14A-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**84.7**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	**4.39 J**	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14A	MW-14A-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**35**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	**5**	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-14A	MW-14A-DUP-011205	FD	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**35**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-14A	MW-14A-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	**5.7**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-14A	MW-14A-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**69**
BDC-MW-14A	MW-14A-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**28**
BDC-MW-14A	MW-14A-031118	N	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.6**	1 U	5 U	1 U	1 U	2 U	--	5 U	**240**
BDC-MW-14A	MW-14A-040504	N	5/4/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.6**	1 U	5 U	1 U	1 U	2 U	--	5 U	**110**
BDC-MW-14A	MW-14A-040823	N	8/23/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**3.6**	1 U	5 U	**2.9**	1 U	2 U	--	5 U	**180**
BDC-MW-14A	MW-14A-041019	N	10/19/2004	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	**6.9**	5 U	25 U	**39**	5 U	10 U	--	25 U	**650**
BDC-MW-14A	MW-14A-050221	N	2/21/2005	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	**1000**
BDC-MW-14A	MW-14A-050516	N	5/16/2005	--	10 U	10 U	50 U	10 U	10 U	10 U	20 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	10 U
BDC-MW-14A	MW-14A-050822	N	8/22/2005	--	10 U	10 U	50 U	10 U	10 U	10 U	20 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	10 U
BDC-MW-14A	MW-14A-051115	N	11/15/2005	--	3 U	3 U	15 U	3 U	3 U	3 U	6 U	15 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-14A	MW-14A-060221	N	2/21/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-DUP-060221	FD	2/21/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-060517	N	5/17/2006	--	2 U	2 U	10 U	2 U	2 U	2 U	4 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	10 U	2 U	2 U	4 U	--	10 U	2 U
BDC-MW-14A	MW-14A-060816	N	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-DUP-060816	FD	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-061129	N	11/29/2006	--	1 U	1 U	2.5 U	1 U	2 U	1 U	1.5 U	**7**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	DC-MW14A-070222	N	2/22/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-14A	MW-14A-070523	N	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	DC-MW14A-071203	N	12/3/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-14A	MW-14A-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-090520	N	5/20/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14A	MW-14A-DUP-090520	FD	5/20/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-100524	N	5/24/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14A	MW-14A-110505	N	5/5/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-14A	MW-14A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-14A	MW-14A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14A	MW-14A-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14A	MW-14A-130521	N	5/21/2013	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14A	MW-14A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14A	MW-14A-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14A	MW-14A-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14C	14C1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.3 J**	--	--	--	--	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	14C1-DUP-890801	FD	8/1/1989	--	--	--	--	--	ND	**0.4 J**	--	--	--	--	--	--	--	--	--	--	**220**	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.0**	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-14C	MW-14C-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-991119	N	11/19/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-14A	MW-14A-DUP-090520	FD	5/20/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-091117	N	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-100524	N	5/24/2010	1 U	1 U	5 U	10 UJ	10 UJ	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-110505	N	5/5/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14A	MW-14A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.2 U	0.2 U
BDC-MW-14A	MW-14A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-14A	MW-14A-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-14A	MW-14A-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
BDC-MW-14A	MW-14A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-14A	MW-14A-140507	N	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-14A	MW-14A-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	14C1-890801	N	8/1/1989	--	--	--	--	--	--	**13**	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	14C1-DUP-890801	FD	8/1/1989	--	--	--	--	--	--	**6.2**	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**9.0**	--	--	--	--
BDC-MW-14C	MW-14C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**110**	--	--	--	--
BDC-MW-14C	MW-14C-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**187.91**	--	--	--	--
BDC-MW-14C	MW-14C-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**1017.82**	--	--	--	--
BDC-MW-14C	MW-14C-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**237.4**	--	--	--	--
BDC-MW-14C	MW-14C-960501	N	5/1/1996	--	--	--	--	--	--	**26.44**	--	--	--	--	--	--	--	--	--	--	--	--	**70.06**	--	--	--	--
BDC-MW-14C	MW-14C-960801	N	8/1/1996	--	--	--	--	--	--	**22**	--	--	--	--	--	--	--	--	--	--	--	--	**326**	--	--	--	--
BDC-MW-14C	MW-14C-961101	N	11/1/1996	--	--	--	--	--	--	**11.7**	--	--	--	--	--	--	--	--	--	--	--	--	**211**	--	--	--	--
BDC-MW-14C	MW-14C-970201	N	2/1/1997	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**183**	--	--	--	--
BDC-MW-14C	MW-14C-970501	N	5/1/1997	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**163**	--	--	--	--
BDC-MW-14C	MW-14C-970801	N	8/1/1997	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**136**	--	--	--	--
BDC-MW-14C	MW-14C-971101	N	11/1/1997	--	--	--	--	--	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	**82.7**	--	--	--	--
BDC-MW-14C	MW-14C-980601	N	6/1/1998	--	--	--	--	--	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	**25.6**	--	--	--	--
BDC-MW-14C	MW-14C-981021	N	10/21/1998	1 U	1 U	1 U	**6.5**	5 U	5 U	**4.64**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**21.7**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2.5**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**6.2**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-991119	N	11/19/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.2**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.4**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.33**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**2.83**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.64 J**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-011205	N	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	**1.1**	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14A	MW-14A-DUP-090520	FD	5/20/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-100524	N	5/24/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-14A	MW-14A-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-110505	N	5/5/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14A	MW-14A-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	**0.5**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-14A	MW-14A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.2**
BDC-MW-14A	MW-14A-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.8**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-14A	MW-14A-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	5 UJ	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
BDC-MW-14A	MW-14A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.7 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-14A	MW-14A-140507	N	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.3**
BDC-MW-14A	MW-14A-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.2**
BDC-MW-14C	14C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**100**	ND	**0.9 J**	--	--	--	**70**	--	--	--	--	**34**
BDC-MW-14C	14C1-DUP-890801	FD	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**120**	ND	ND	--	--	--	**78**	--	--	--	--	**46**
BDC-MW-14C	MW-14C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	**2.3**	--	--	--	--	**98**
BDC-MW-14C	MW-14C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.2**	--	--	--	--	--	**6.6**	--	--	--	--	**120**
BDC-MW-14C	MW-14C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.02**	--	--	--	--	--	**14.41**	--	--	--	--	**103.49**
BDC-MW-14C	MW-14C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10.53**	--	--	--	--	--	**21.93**	--	--	--	--	**1587.3**
BDC-MW-14C	MW-14C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.64 J**	--	--	--	--	--	**13.33**	--	--	--	--	**1477**
BDC-MW-14C	MW-14C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	**5.44**	--	--	--	--	--	**7.61**	--	--	--	--	**134.78**
BDC-MW-14C	MW-14C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	**6.1**	--	--	--	--	--	**12.5**	--	--	--	--	**414**
BDC-MW-14C	MW-14C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**175**
BDC-MW-14C	MW-14C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**1296**
BDC-MW-14C	MW-14C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**307**
BDC-MW-14C	MW-14C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**148**
BDC-MW-14C	MW-14C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**11.8**	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**144**
BDC-MW-14C	MW-14C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	**7.2**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**39.4**
BDC-MW-14C	MW-14C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	**6.5**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	**56.4**
BDC-MW-14C	MW-14C-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**6.3**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**30.2**
BDC-MW-14C	MW-14C-991119	N	11/19/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**7.3**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14C	MW-14C-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**17.2**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14C	MW-14C-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**8.7**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**4.67**
BDC-MW-14C	MW-14C-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**6.79 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.21 J**
BDC-MW-14C	MW-14C-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**3.5**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-14C	MW-14C-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-14C	MW-14C-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**4.4**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14C	MW-14C-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-DUP-030602	FD	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-031118	N	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-040504	N	5/4/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-041026	N	10/26/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-DUP-041026	FD	10/26/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-050516	N	5/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**21**	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-061129	N	11/29/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-14C	MW-14C-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-DUP-070523	FD	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	DC-MW14C-071203	N	12/3/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-14C	MW-14C-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-090520	N	5/20/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-DUP-091117	FD	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-100524	N	5/24/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14C	MW-14C-110505	N	5/5/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-14C	MW-14C-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.2**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-14C	MW-14C-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14C	MW-14C-121114	N	11/14/2012	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-14C	MW-14C-130521	N	5/21/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-14C	MW-14C-131112	N	11/12/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 UJ	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-14C	MW-14C-140507	N	5/7/2014	2.5 U	2.5 U	1 U	1 U	--	2.5 U	1 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	--	2.5 U	1 U	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	--	--	2.5 U	25 U
BDC-MW-14C	MW-14C-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14C	MW-14C-150429	N	4/29/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14C	MW-14C-151027	N	10/27/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 UJ	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14C	MW-14C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14C	MW-14C-161102	N	11/2/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-14C	MW-14C-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-14C	MW-14C-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-14C	MW-14C-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-14C	MW-14C-181106	N	11/6/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-14C	MW-14C-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**31**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-DUP-030602	FD	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**31**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-031118	N	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-040504	N	5/4/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**63**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-041026	N	10/26/2004	1 U	1 U	5 U	**12 J**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**22**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-DUP-041026	FD	10/26/2004	1 U	1 U	5 U	5 UJ	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**22**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-050516	N	5/16/2005	1 U	1 U	5 U	**9.6**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-061129	N	11/29/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-14C	MW-14C-070523	N	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-DUP-070523	FD	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	DC-MW14C-071203	N	12/3/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.1**	1.0 U	--	1.0 U	1.0 U
BDC-MW-14C	MW-14C-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-081124	N	11/24/2008	1 U	1 U	5 U	**6.1**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-090520	N	5/20/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-091117	N	11/17/2009	1 U	1 U	5 U	**10**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-DUP-091117	FD	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-100524	N	5/24/2010	1 U	1 U	5 U	10 UJ	10 UJ	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-110505	N	5/5/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14C	MW-14C-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	**3**	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-14C	MW-14C-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	MW-14C-121114	N	11/14/2012	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-14C	MW-14C-130521	N	5/21/2013	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-14C	MW-14C-131112	N	11/12/2013	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-14C	MW-14C-140507	N	5/7/2014	2.5 U	2.5 U	25 U	25 U	130 UJ	25 U	1 U	2.5 U	2.5 U	2.5 U	--	2.5 U	2.5 U	2.5 UJ	1 U	2.5 U	2.5 U	1 U	2.5 UJ	1 U	1 U	--	2.5 U	2.5 U
BDC-MW-14C	MW-14C-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	MW-14C-150429	N	4/29/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	MW-14C-151027	N	10/27/2015	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	MW-14C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-MW-14C	MW-14C-161102	N	11/2/2016	0.5 U	0.5 U	5 UJ	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	MW-14C-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	MW-14C-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-14C	MW-14C-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.22**	0.20 U	--	0.20 U	0.20 U
BDC-MW-14C	MW-14C-181106	N	11/6/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14C	MW-14C-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**50**
BDC-MW-14C	MW-14C-DUP-030602	FD	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**51**
BDC-MW-14C	MW-14C-031118	N	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**35**
BDC-MW-14C	MW-14C-040504	N	5/4/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**44**
BDC-MW-14C	MW-14C-041026	N	10/26/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**75**
BDC-MW-14C	MW-14C-DUP-041026	FD	10/26/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**74**
BDC-MW-14C	MW-14C-050516	N	5/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.1**
BDC-MW-14C	MW-14C-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.8**
BDC-MW-14C	MW-14C-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14C	MW-14C-061129	N	11/29/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**6.3**	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**1**
BDC-MW-14C	MW-14C-070523	N	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**6.2**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.5**
BDC-MW-14C	MW-14C-DUP-070523	FD	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**6.7**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.4**
BDC-MW-14C	DC-MW14C-071203	N	12/3/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**11**
BDC-MW-14C	MW-14C-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**22**
BDC-MW-14C	MW-14C-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**4.3**
BDC-MW-14C	MW-14C-090520	N	5/20/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.1**
BDC-MW-14C	MW-14C-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14C	MW-14C-DUP-091117	FD	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14C	MW-14C-100524	N	5/24/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**15**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-14C	MW-14C-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14C	MW-14C-110505	N	5/5/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14C	MW-14C-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-14C	MW-14C-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-14C	MW-14C-121114	N	11/14/2012	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-14C	MW-14C-130521	N	5/21/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-14C	MW-14C-131112	N	11/12/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-14C	MW-14C-140507	N	5/7/2014	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	--	1 U	1 U	25 U	1 U	2.5 U	2.5 U	--	2.5 U	1 U
BDC-MW-14C	MW-14C-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-14C	MW-14C-150429	N	4/29/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-14C	MW-14C-151027	N	10/27/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-14C	MW-14C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-MW-14C	MW-14C-161102	N	11/2/2016	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-14C	MW-14C-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.2**
BDC-MW-14C	MW-14C-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5.0 U	0.2 U	0.5 U	--	--	0.5 U	**0.2**
BDC-MW-14C	MW-14C-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.23**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-14C	MW-14C-181106	N	11/6/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**7.34**	0.50 U	**0.78**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14C	MW-14C-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-14C	MW-14C-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-14E	MW-14E-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.3**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-910501	N	5/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**17**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-14E	MW-14E-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-DUP-990616	FD	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-991119	N	11/19/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-031118	N	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-040504	N	5/4/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-041026	N	10/26/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-050516	N	5/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**12**	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-061129	N	11/29/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-14E	MW-14E-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	DC-MW14E-071203	N	12/3/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-14C	MW-14C-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-14C	MW-14C-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-14E	MW-14E-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**9.3**	--	--	--	--
BDC-MW-14E	MW-14E-910501	N	5/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-14E	MW-14E-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-MW-14E	MW-14E-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-14E	MW-14E-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-14E	MW-14E-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-14E	MW-14E-981021	N	10/21/1998	1 U	1 U	1 U	**5.9**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-DUP-990616	FD	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-991119	N	11/19/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-011205	N	12/5/2001	1 U	1 U	1 U	**3.5**	3.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	**2.6**	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-031118	N	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-040504	N	5/4/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-041026	N	10/26/2004	1 U	1 U	5 U	**11**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-050516	N	5/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-061129	N	11/29/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-14E	MW-14E-070523	N	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	DC-MW14E-071203	N	12/3/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14C	MW-14C-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-14C	MW-14C-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-14E	MW-14E-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--	--	**4.3**	--	--	--	--	ND
BDC-MW-14E	MW-14E-910501	N	5/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**2.3**	--	--	--	--	**20**
BDC-MW-14E	MW-14E-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**10**
BDC-MW-14E	MW-14E-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.43**
BDC-MW-14E	MW-14E-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-14E	MW-14E-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-14E	MW-14E-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-14E	MW-14E-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.3**
BDC-MW-14E	MW-14E-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-14E	MW-14E-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-14E	MW-14E-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.3**
BDC-MW-14E	MW-14E-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-14E	MW-14E-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-14E	MW-14E-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-14E	MW-14E-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-14E	MW-14E-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14E	MW-14E-DUP-990616	FD	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14E	MW-14E-991119	N	11/19/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14E	MW-14E-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14E	MW-14E-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14E	MW-14E-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-14E	MW-14E-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-14E	MW-14E-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-14E	MW-14E-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-14E	MW-14E-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-031118	N	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-040504	N	5/4/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-041026	N	10/26/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-050516	N	5/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-061129	N	11/29/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-14E	MW-14E-070523	N	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	DC-MW14E-071203	N	12/3/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14E	MW-14E-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-090520	N	5/20/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-14E	MW-14E-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15A	15A1-890801	N	8/1/1989	--	--	--	--	--	ND	**4.3 J**	--	--	--	--	--	--	--	--	--	--	**1800**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.8**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.29 U	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**8.8**	1 U	--	1 U	1 U	--	1 U	**3.6**	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-15A	MW-15A-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-991121	N	11/21/1999	10 U	10 U	10 U	10 U	--	10 U	11.8 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-15A	MW-15A-000608	N	6/8/2000	10 U	10 U	10 U	10 U	--	10 U	11.8 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-15A	MW-15A-001203	N	12/3/2000	10 U	10 U	10 U	10 U	--	10 U	11.8 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-15A	MW-15A-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	**1.75 J**	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	**4.4**	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	**4.2**	5 U	--	1 U	1 U	--	1 U	**1.5**	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15A	MW-15A-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	**4.7**	5 U	--	1 U	1 U	--	1 U	**1.1**	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-15A	MW-15A-030602	N	6/2/2003	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-15A	MW-15A-031118	N	11/18/2003	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-15A	MW-15A-040503	N	5/3/2004	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-15A	MW-15A-041026	N	10/26/2004	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-15A	MW-15A-050516	N	5/16/2005	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-15A	MW-15A-051115	N	11/15/2005	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-15A	MW-15A-DUP-051115	FD	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15A	MW-15A-060517	N	5/17/2006	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-15A	MW-15A-061129	N	11/29/2006	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	7.5 U	7.5 U	7.5 U	3 U	7.5 U	--	3 U	3 U	--	3 U	3 U	3 U	3 U	3 U	3 U	15 U	7.5 U	--	3 U	45 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-14E	MW-14E-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-081124	N	11/24/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-090520	N	5/20/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-14E	MW-14E-091117	N	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-15A	15A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**0.4 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15A	MW-15A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**6.8**	--	--	--	--
BDC-MW-15A	MW-15A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**9.1**	--	--	--	--
BDC-MW-15A	MW-15A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**3.29**	--	--	--	--
BDC-MW-15A	MW-15A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-15A	MW-15A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-15A	MW-15A-960501	N	5/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-15A	MW-15A-960801	N	8/1/1996	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--
BDC-MW-15A	MW-15A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**3.5**	--	--	--	--
BDC-MW-15A	MW-15A-970201	N	2/1/1997	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--	--	--	--	--	--	**4.5**	--	--	--	--
BDC-MW-15A	MW-15A-970501	N	5/1/1997	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**5**	--	--	--	--
BDC-MW-15A	MW-15A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**5.5**	--	--	--	--
BDC-MW-15A	MW-15A-971101	N	11/1/1997	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**5.5**	--	--	--	--
BDC-MW-15A	MW-15A-980601	N	6/1/1998	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	--	--	--	--	--	--	**15.65**	--	--	--	--
BDC-MW-15A	MW-15A-981021	N	10/21/1998	1 U	1 U	1 U	**5.5**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.4**	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-991121	N	11/21/1999	10 U	10 U	10 U	29.7 U	32.4 U	10 U	10 U	10 U	10 U	10 U	--	12.8 U	13.9 U	10 U	19.2 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-15A	MW-15A-000608	N	6/8/2000	10 U	10 U	10 U	29.7 U	32.4 U	10 U	10 U	10 U	10 U	10 U	--	12.8 U	13.9 U	10 U	19.2 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-15A	MW-15A-001203	N	12/3/2000	10 U	10 U	10 U	29.7 U	32.4 U	10 U	10 U	10 U	10 U	10 U	--	12.8 U	13.9 U	10 U	19.2 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-15A	MW-15A-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**4.99 J**	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-011205	N	12/5/2001	1 U	1 U	1 U	**5.1**	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**4.9**	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.8**	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.8**	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-030602	N	6/2/2003	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15A	MW-15A-031118	N	11/18/2003	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15A	MW-15A-040503	N	5/3/2004	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15A	MW-15A-041026	N	10/26/2004	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15A	MW-15A-050516	N	5/16/2005	5 U	5 U	25 U	25 U	250 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15A	MW-15A-051115	N	11/15/2005	5 U	5 U	25 U	25 U	250 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15A	MW-15A-DUP-051115	FD	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-060517	N	5/17/2006	5 U	5 U	25 U	25 U	250 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15A	MW-15A-061129	N	11/29/2006	3 U	3 U	15 U	45 U	75 U	15 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-14E	MW-14E-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-090520	N	5/20/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-14E	MW-14E-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15A	15A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.2 J**	ND	ND	--	--	--	**21**	--	--	--	--	**7.7 J**
BDC-MW-15A	MW-15A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	**12**
BDC-MW-15A	MW-15A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11**	--	--	--	--	--	**7.5**	--	--	--	--	**16**
BDC-MW-15A	MW-15A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**13.84**
BDC-MW-15A	MW-15A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**31.2**
BDC-MW-15A	MW-15A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**54.62**
BDC-MW-15A	MW-15A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	**423.67**	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**19.45**
BDC-MW-15A	MW-15A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**239**	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**19.4**
BDC-MW-15A	MW-15A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	**152**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**23**
BDC-MW-15A	MW-15A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	**247**	--	--	--	--	--	--	4 U	--	--	--	--	--	4 U	--	--	--	--	**20.4**
BDC-MW-15A	MW-15A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	**136**	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**23.5**
BDC-MW-15A	MW-15A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	**67.3**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**17.4**
BDC-MW-15A	MW-15A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**465 J**	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**18.6**
BDC-MW-15A	MW-15A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	**1721 J**	--	--	--	--	--	--	3.33 U	--	--	--	--	--	3.33 U	--	--	--	--	**61.61**
BDC-MW-15A	MW-15A-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	**916**	1 U	1 U	--	1 U	1 U	1 U	1 U	**1.7**	**6.3**	1 U	1 U	--	1 U	1 U	--	--	--	**17.2**
BDC-MW-15A	MW-15A-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**58.9**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**2.9**
BDC-MW-15A	MW-15A-991121	N	11/21/1999	11.2 U	10 U	10 U	10 U	10 U	--	--	10 U	**561**	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	14.6 U	--	--	--	**37**
BDC-MW-15A	MW-15A-000608	N	6/8/2000	11.2 U	10 U	10 U	10 U	10 U	--	--	10 U	**797**	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	14.6 U	--	--	--	**16**
BDC-MW-15A	MW-15A-001203	N	12/3/2000	11.2 U	10 U	10 U	10 U	10 U	--	--	10 U	**695.6**	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	14.6 U	--	--	--	10 U
BDC-MW-15A	MW-15A-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**985.5**	1 U	1 U	--	1 U	**2.16 J**	1 U	1 U	1 U	**6.32 J**	1 U	1 U	--	1 U	1.46 U	--	--	--	**3.86 J**
BDC-MW-15A	MW-15A-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**1100**	1 U	1 U	--	1 U	1 U	1 U	1 U	**1.1**	**7.1**	1 U	1 U	--	1 U	1.5 U	--	--	--	**1.8**
BDC-MW-15A	MW-15A-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	**840 J**	1 U	1 U	**1.4**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**2.0**
BDC-MW-15A	MW-15A-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	**2.0**	1 U	2.0 U	**510**	1 U	1 U	**2.0**	1 U	1 U	1 U	1 U	**1.2**	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**3.3**
BDC-MW-15A	MW-15A-030602	N	6/2/2003	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**370**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-15A	MW-15A-031118	N	11/18/2003	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**490**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-15A	MW-15A-040503	N	5/3/2004	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**700**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-15A	MW-15A-041026	N	10/26/2004	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**430**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-15A	MW-15A-050516	N	5/16/2005	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**440**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-15A	MW-15A-051115	N	11/15/2005	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**390**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-15A	MW-15A-DUP-051115	FD	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**390**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.4**
BDC-MW-15A	MW-15A-060517	N	5/17/2006	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**220**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-15A	MW-15A-061129	N	11/29/2006	--	3 U	3 U	7.5 U	3 U	6 U	3 U	4.5 U	**180**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	3 U	--	3 U	3 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-15A	MW-15A-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15A	DC-MW15A-071203	N	12/3/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-15A	MW-15A-080520	N	5/20/2008	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	6 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	3 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-15A	MW-15A-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.4**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**8.4**	5 U	--	1 U	5 U
BDC-MW-15A	MW-15A-090519	N	5/19/2009	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	6 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	15 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-15A	MW-15A-DUP-090519	FD	5/19/2009	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	6 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	15 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-15A	MW-15A-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**2**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15A	MW-15A-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.6**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15A	MW-15A-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**2.2**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15A	MW-15A-110505	N	5/5/2011	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	50 U	10 U	10 U	50 U	50 UJ	--	10 U	50 U
BDC-MW-15A	MW-15A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**2.1**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-15A	MW-15A-120514	N	5/14/2012	2.5 U	2.5 U	1 U	1 U	--	2.5 U	1 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U	--	2.5 U	1 U	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	--	--	2.5 U	25 U
BDC-MW-15A	MW-15A-121113	N	11/13/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**1.7**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15A	MW-15A-130521	N	5/21/2013	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15A	MW-15A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15A	MW-15A-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15A	MW-15A-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**0.6**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15C	15C1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.6 J**	--	--	--	--	--	--	--	--	--	**260**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**69**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-15C	MW-15C-990616	N	6/16/1999	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-15C	MW-15C-991121	N	11/21/1999	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-15C	MW-15C-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-15A	MW-15A-070523	N	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-15A	DC-MW15A-071203	N	12/3/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-15A	MW-15A-080520	N	5/20/2008	3 U	3 U	15 U	15 U	30 U	15 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U
BDC-MW-15A	MW-15A-081124	N	11/24/2008	1 U	1 U	5 U	**10**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-090519	N	5/19/2009	3 U	3 U	15 U	30 U	30 U	15 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U
BDC-MW-15A	MW-15A-DUP-090519	FD	5/19/2009	3 U	3 U	15 U	30 U	30 U	15 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U
BDC-MW-15A	MW-15A-091118	N	11/18/2009	1 U	1 U	5 U	**11**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15A	MW-15A-110505	N	5/5/2011	10 U	10 U	50 U	100 U	100 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-15A	MW-15A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	**7**	5 U	1 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-15A	MW-15A-120514	N	5/14/2012	2.5 U	2.5 U	25 U	25 U	130 U	25 U	1 U	2.5 U	2.5 U	2.5 U	--	2.5 U	2.5 U	2.5 U	1 U	2.5 U	2.5 U	1 U	2.5 U	1 U	1 U	--	2.5 U	2.5 U
BDC-MW-15A	MW-15A-121113	N	11/13/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.4**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15A	MW-15A-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.6**	0.5 U	--	0.5 U	0.5 U
BDC-MW-15A	MW-15A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	**6.8**	25 U	5 U	**0.3**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15A	MW-15A-140507	N	5/7/2014	0.5 U	0.5 U	5 U	**15**	25 UJ	5 U	**0.3**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15A	MW-15A-141105	N	11/5/2014	0.5 U	0.5 U	5 U	**27**	25 U	5 U	**0.2**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15C	15C1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**69**	--	--	--	--
BDC-MW-15C	MW-15C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**92**	--	--	--	--
BDC-MW-15C	MW-15C-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**69.14**	--	--	--	--
BDC-MW-15C	MW-15C-951001	N	10/1/1995	--	--	--	--	--	--	33.3 U	--	--	--	--	--	--	--	--	--	--	--	--	**640.52**	--	--	--	--
BDC-MW-15C	MW-15C-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**93.62**	--	--	--	--
BDC-MW-15C	MW-15C-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.47**	--	--	--	--
BDC-MW-15C	MW-15C-960801	N	8/1/1996	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	--	--	--	--	--	--	**463**	--	--	--	--
BDC-MW-15C	MW-15C-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**532**	--	--	--	--
BDC-MW-15C	MW-15C-970201	N	2/1/1997	--	--	--	--	--	--	2 U	--	--	--	--	--	--	--	--	--	--	--	--	**187**	--	--	--	--
BDC-MW-15C	MW-15C-970501	N	5/1/1997	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**1470**	--	--	--	--
BDC-MW-15C	MW-15C-970801	N	8/1/1997	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**1100**	--	--	--	--
BDC-MW-15C	MW-15C-971101	N	11/1/1997	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**719**	--	--	--	--
BDC-MW-15C	MW-15C-980601	N	6/1/1998	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	--	--	--	--	--	--	**785 J**	--	--	--	--
BDC-MW-15C	MW-15C-981021	N	10/21/1998	1 U	1 U	1 U	**5.2**	5 U	5 U	**5.2**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**90.5**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-990616	N	6/16/1999	2 U	2 U	2 U	5.94 U	6.48 U	2 U	**5.2**	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	**53.2**	2 U	--	2 U	2 U
BDC-MW-15C	MW-15C-991121	N	11/21/1999	2 U	2 U	2 U	5.94 U	6.48 U	2 U	**5.4**	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	**28.4**	2 U	--	2 U	2 U
BDC-MW-15C	MW-15C-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.01**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**4.28**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**2.53**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-15A	MW-15A-070523	N	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**72**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.6**
BDC-MW-15A	DC-MW15A-071203	N	12/3/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	**170**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**1.3**
BDC-MW-15A	MW-15A-080520	N	5/20/2008	--	3 U	3 U	15 U	3 U	3 U	3 U	6 U	**180**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-15A	MW-15A-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**230**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	2 U
BDC-MW-15A	MW-15A-090519	N	5/19/2009	--	3 U	3 U	15 U	3 U	6 U	3 U	6 U	**170**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-15A	MW-15A-DUP-090519	FD	5/19/2009	--	3 U	3 U	15 U	3 U	6 U	3 U	6 U	**170**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-15A	MW-15A-091118	N	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**190**	1 U	1 U	**1.1**	1 U	1 U	1 U	1 U	**1.2**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.4**
BDC-MW-15A	MW-15A-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**310**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	**1.6**
BDC-MW-15A	MW-15A-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**240**	1 U	1 U	**1.1**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	**1.4**
BDC-MW-15A	MW-15A-110505	N	5/5/2011	--	10 U	10 U	50 U	10 U	20 U	10 U	20 U	**210**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	10 U
BDC-MW-15A	MW-15A-111113	N	11/13/2011	--	**0.7**	0.2 U	0.5 U	0.2 U	**1**	1 U	0.5 U	**190**	0.2 U	0.2 U	**1**	0.2 U	0.2 U	0.2 U	0.2 U	**1.4**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**1**
BDC-MW-15A	MW-15A-120514	N	5/14/2012	--	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**170**	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1 U	1 U	--	1 U	1 U	25 U	1 U	2.5 U	2.5 U	--	2.5 U	**1.2**
BDC-MW-15A	MW-15A-121113	N	11/13/2012	--	**0.6**	0.5 U	0.5 U	0.5 U	**0.8**	0.5 U	0.5 U	**120**	0.5 U	0.5 U	**0.9**	0.5 U	0.5 U	0.5 U	0.2 U	**1.2**	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.8**
BDC-MW-15A	MW-15A-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**84**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.5**	--	0.5 U	0.5 U	5 UJ	0.5 U	0.5 U	0.5 U	--	0.5 U	**1.1**
BDC-MW-15A	MW-15A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**180**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.7**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.8**
BDC-MW-15A	MW-15A-140507	N	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**89**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**2.9**	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1**
BDC-MW-15A	MW-15A-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**190**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**1.3**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.5**
BDC-MW-15C	15C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	ND	ND	--	--	--	**22**	--	--	--	--	**19**
BDC-MW-15C	MW-15C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--	--	**4.7**	--	--	--	--	**16**
BDC-MW-15C	MW-15C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**13**	--	--	--	--	--	**12**	--	--	--	--	**38**
BDC-MW-15C	MW-15C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**38.79**
BDC-MW-15C	MW-15C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33.3 U	--	--	--	--	--	33.3 U	--	--	--	--	**142.38**
BDC-MW-15C	MW-15C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**69.81**
BDC-MW-15C	MW-15C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**5.12**
BDC-MW-15C	MW-15C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**1**	--	--	--	--	--	--	**1.1**	--	--	--	--	--	**7.5**	--	--	--	--	**104**
BDC-MW-15C	MW-15C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**220**
BDC-MW-15C	MW-15C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	**4.4**	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**69**
BDC-MW-15C	MW-15C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	**12**	--	--	--	--	**598**
BDC-MW-15C	MW-15C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**519**
BDC-MW-15C	MW-15C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**500**
BDC-MW-15C	MW-15C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	3.33 U	--	--	--	--	--	3.33 U	--	--	--	--	**772 J**
BDC-MW-15C	MW-15C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	**4.8**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	**1.8**	1 U	--	1 U	1 U	--	--	--	**194 J**
BDC-MW-15C	MW-15C-990616	N	6/16/1999	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2.92 U	--	--	--	**121.2**
BDC-MW-15C	MW-15C-991121	N	11/21/1999	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2.92 U	--	--	--	**49.2**
BDC-MW-15C	MW-15C-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**29.8**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.4**
BDC-MW-15C	MW-15C-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**21.32**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-15C	MW-15C-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-DUP-021205	FD	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-031118	N	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-DUP-031118	FD	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-041026	N	10/26/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-050516	N	5/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-061129	N	11/29/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-15C	MW-15C-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	DC-MW15C-071203	N	12/3/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-15C	MW-15C-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-DUP-091118	FD	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-DUP-101110	FD	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15C	MW-15C-110505	N	5/5/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-15C	MW-15C-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-15C	MW-15C-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15C	MW-15C-121113	N	11/13/2012	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-15C	MW-15C-130521	N	5/21/2013	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-15C	MW-15C-131112	N	11/12/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-15C	MW-15C-140507	N	5/7/2014	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-15C	MW-15C-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15C	MW-15C-150429	N	4/29/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15C	MW-15C-151027	N	10/27/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 UJ	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-15C	MW-15C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15C	MW-15C-161102	N	11/2/2016	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5 UJ	--	--	0.5 UJ	5 UJ

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-15C	MW-15C-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2.92 J**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-011205	N	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	**3.2**	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-DUP-021205	FD	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.9**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-031118	N	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.7**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-DUP-031118	FD	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.3**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.1**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-041026	N	10/26/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-050516	N	5/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-061129	N	11/29/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-15C	MW-15C-070523	N	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	DC-MW15C-071203	N	12/3/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-15C	MW-15C-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-081124	N	11/24/2008	1 U	1 U	5 U	**5.6**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-091118	N	11/18/2009	1 U	1 U	5 U	10 U	10 UJ	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-DUP-091118	FD	11/18/2009	1 U	1 U	5 U	10 U	10 UJ	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-100520	N	5/20/2010	1 U	1 U	5 U	10 UJ	10 UJ	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-DUP-101110	FD	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-110505	N	5/5/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15C	MW-15C-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-15C	MW-15C-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-15C	MW-15C-121113	N	11/13/2012	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-15C	MW-15C-130521	N	5/21/2013	5 U	5 U	50 U	50 U	250 UJ	50 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15C	MW-15C-131112	N	11/12/2013	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-15C	MW-15C-140507	N	5/7/2014	5 U	5 U	50 U	50 U	250 UJ	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-15C	MW-15C-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15C	MW-15C-150429	N	4/29/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15C	MW-15C-151027	N	10/27/2015	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15C	MW-15C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-MW-15C	MW-15C-161102	N	11/2/2016	0.5 UJ	0.5 UJ	5 UJ	**6.9 J**	25 UJ	5 UJ	**0.2 J**	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	**0.9 J**	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**1.7 J**	0.2 UJ	--	0.5 UJ	0.5 UJ

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-15C	MW-15C-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-15C	MW-15C-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	**1.5**
BDC-MW-15C	MW-15C-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-15C	MW-15C-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**1.3**
BDC-MW-15C	MW-15C-DUP-021205	FD	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**1.3**
BDC-MW-15C	MW-15C-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**5.6**
BDC-MW-15C	MW-15C-031118	N	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**16**
BDC-MW-15C	MW-15C-DUP-031118	FD	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**17**
BDC-MW-15C	MW-15C-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**11**
BDC-MW-15C	MW-15C-041026	N	10/26/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**17**
BDC-MW-15C	MW-15C-050516	N	5/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.4**
BDC-MW-15C	MW-15C-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-061129	N	11/29/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.2**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-15C	MW-15C-070523	N	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**
BDC-MW-15C	DC-MW15C-071203	N	12/3/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**2.5**
BDC-MW-15C	MW-15C-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.6**
BDC-MW-15C	MW-15C-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.6**
BDC-MW-15C	MW-15C-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-091118	N	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-DUP-091118	FD	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-15C	MW-15C-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-DUP-101110	FD	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-110505	N	5/5/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15C	MW-15C-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.2**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-15C	MW-15C-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.4**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-15C	MW-15C-121113	N	11/13/2012	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	**3.2**	5 U	5 U	--	5 U	2 U
BDC-MW-15C	MW-15C-130521	N	5/21/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	50 UJ	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-15C	MW-15C-131112	N	11/12/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	**2.3**
BDC-MW-15C	MW-15C-140507	N	5/7/2014	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 UJ	2 U	5 U	5 U	--	5 U	**2.9**
BDC-MW-15C	MW-15C-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.5**
BDC-MW-15C	MW-15C-150429	N	4/29/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.4**
BDC-MW-15C	MW-15C-151027	N	10/27/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**2**
BDC-MW-15C	MW-15C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	--	**0.6**	--	--	--	**0.5**
BDC-MW-15C	MW-15C-161102	N	11/2/2016	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**0.5 J**	--	**0.7 J**	0.2 UJ	5 UJ	**0.3 J**	0.5 UJ	0.5 UJ	--	0.5 UJ	**0.7 J**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-15C	MW-15C-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-15C	MW-15C-171108	N	11/8/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1.0 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5.0 UJ	--	--	0.5 UJ	5.0 UJ
BDC-MW-15C	MW-15C-180501	N	5/1/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 UJ	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-15C	MW-15C-181105	N	11/5/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 UJ	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 UJ	--	--	2.00 U	50.0 U
BDC-MW-15C	MW-15C-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-15C	MW-15C-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-15D	15D1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15D	MW-15D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15D	MW-15D-980609	N	6/9/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-15D	MW-15D-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-15D	MW-15D-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-991121	N	11/21/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-DUP-001204	FD	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-031118	N	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-041026	N	10/26/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-050516	N	5/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-061129	N	11/29/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	1 U	2.5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	2.5 U	--	1 U	15 U
BDC-MW-15D	MW-15D-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	DC-MW15D-071203	N	12/3/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-15D	MW-15D-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-15D	MW-15D-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	16A1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**1.8 J**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-15C	MW-15C-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**1.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-15C	MW-15C-171108	N	11/8/2017	0.5 UJ	0.5 UJ	5.0 UJ	**10 J**	25 UJ	5.0 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**1.3 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-15C	MW-15C-180501	N	5/1/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-15C	MW-15C-181105	N	11/5/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 UJ	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-15C	MW-15C-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.57**	0.20 U	--	0.20 U	0.20 U
BDC-MW-15C	MW-15C-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.39**	0.20 U	--	0.20 U	0.20 U
BDC-MW-15D	15D1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**0.3 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-15D	MW-15D-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-15D	MW-15D-980609	N	6/9/1998	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-981021	N	10/21/1998	1 U	1 U	1 U	**5.7**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-991121	N	11/21/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	**1.1**	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2.76**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**91.77**	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-DUP-001204	FD	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	**1.45 J**	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-011205	N	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-031118	N	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-041026	N	10/26/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-050516	N	5/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-051115	N	11/15/2005	1 U	1 U	5 U	**5.7**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-061129	N	11/29/2006	1 U	1 U	5 U	15 U	25 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-070523	N	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	DC-MW15D-071203	N	12/3/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-15D	MW-15D-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-081124	N	11/24/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-091118	N	11/18/2009	1 U	1 U	5 U	10 U	10 UJ	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-16A	16A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**0.3 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**5.6**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-15C	MW-15C-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.5**	--	**0.4**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 UJ	**0.5 J**
BDC-MW-15C	MW-15C-171108	N	11/8/2017	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**0.7 J**	--	**0.5 J**	0.2 UJ	5.0 UJ	0.2 UJ	0.5 UJ	--	--	0.5 UJ	**0.4 J**
BDC-MW-15C	MW-15C-180501	N	5/1/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-15C	MW-15C-181105	N	11/5/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 UJ	2.00 U	2.00 U	--	--	2.00 UJ	2.00 U
BDC-MW-15C	MW-15C-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.20**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.29**
BDC-MW-15C	MW-15C-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.31**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.24**
BDC-MW-15D	15D1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.6 J**	ND	ND	--	--	--	ND	--	--	--	--	**210**
BDC-MW-15D	MW-15D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	**190**
BDC-MW-15D	MW-15D-980609	N	6/9/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	**8.6**
BDC-MW-15D	MW-15D-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	**5.2**
BDC-MW-15D	MW-15D-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-15D	MW-15D-991121	N	11/21/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-15D	MW-15D-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-15D	MW-15D-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-15D	MW-15D-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**44.97**	1 U	1 U	--	1 U	1 U	1 U	**10.19**	1 U	1 U	1 U	1 U	--	**8.71**	1.46 U	--	--	--	**21.58**
BDC-MW-15D	MW-15D-DUP-001204	FD	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-15D	MW-15D-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-15D	MW-15D-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**7.4**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-15D	MW-15D-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-15D	MW-15D-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-15D	MW-15D-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-031118	N	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-041026	N	10/26/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-050516	N	5/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-061129	N	11/29/2006	--	1 U	1 U	2.5 U	1 U	2 U	1 U	1.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-15D	MW-15D-070523	N	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	DC-MW15D-071203	N	12/3/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-15D	MW-15D-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-15D	MW-15D-091118	N	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-16A	16A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7 J**	ND	ND	--	--	--	**5.1**	--	--	--	--	ND
BDC-MW-16A	MW-16A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--	--	**5.8**	--	--	--	--	**8.9**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16A	MW-16A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-16A	MW-16A-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-000601	N	6/1/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-031118	N	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-060516	N	5/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-DUP-060516	FD	5/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-061126	N	11/26/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-16A	MW-16A-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-071128	N	11/28/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-16A	MW-16A-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-091116	N	11/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-16A	MW-16A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**5.5**	--	--	--	--
BDC-MW-16A	MW-16A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**12.63**	--	--	--	--
BDC-MW-16A	MW-16A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**5.38 J**	--	--	--	--
BDC-MW-16A	MW-16A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-16A	MW-16A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**25.39**	--	--	--	--
BDC-MW-16A	MW-16A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**12**	--	--	--	--
BDC-MW-16A	MW-16A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**3.2**	--	--	--	--
BDC-MW-16A	MW-16A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.2**	--	--	--	--
BDC-MW-16A	MW-16A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2.4**	--	--	--	--
BDC-MW-16A	MW-16A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-MW-16A	MW-16A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-16A	MW-16A-980601	N	6/1/1998	--	--	--	--	--	--	**2**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-16A	MW-16A-981020	N	10/20/1998	1 U	1 U	1 U	**3.4**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**10.9**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**49.8**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-000601	N	6/1/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.6**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**46.03**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.76**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**33.88**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.82 J**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	**15**	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**2.6**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-031118	N	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-041025	N	10/25/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.6**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-060516	N	5/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-DUP-060516	FD	5/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-061126	N	11/26/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**4.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-16A	MW-16A-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-071128	N	11/28/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-16A	MW-16A-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-091116	N	11/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16A	MW-16A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--	--	**4.4**	--	--	--	--	**6**
BDC-MW-16A	MW-16A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--	--	**5.02**	--	--	--	--	**9.18**
BDC-MW-16A	MW-16A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-16A	MW-16A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-16A	MW-16A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**2.57**	--	--	--	--	**8.42**
BDC-MW-16A	MW-16A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.7**	--	--	--	--	--	**4**	--	--	--	--	**4.4**
BDC-MW-16A	MW-16A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**2.1**	--	--	--	--	1 U
BDC-MW-16A	MW-16A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.1**	--	--	--	--	--	**2.6**	--	--	--	--	1 U
BDC-MW-16A	MW-16A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**2**	--	--	--	--	**2.2**
BDC-MW-16A	MW-16A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	**1.9**	--	--	--	--	1 U
BDC-MW-16A	MW-16A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-16A	MW-16A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.64**	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-16A	MW-16A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.03**	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-16A	MW-16A-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.3**	1 U	1 U	1 U	1 U	--	**1.01**	1.46 U	--	--	--	1 U
BDC-MW-16A	MW-16A-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.3**	1 U	1 U	1 U	1 U	--	**1.4**	1.46 U	--	--	--	1 U
BDC-MW-16A	MW-16A-000601	N	6/1/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.2**	1 U	1 U	1 U	1 U	--	**1.2**	1.46 U	--	--	--	1 U
BDC-MW-16A	MW-16A-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.08**	1.46 U	--	--	--	1 U
BDC-MW-16A	MW-16A-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	**1.06 J**	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-16A	MW-16A-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**3.1**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-16A	MW-16A-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-16A	MW-16A-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**1.5**	1 U	2.0 U	--	5 U	1 U
BDC-MW-16A	MW-16A-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**1.3**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-031118	N	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**1.3**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U	5 U	**1.8**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U	5 U	**2.2**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-060516	N	5/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U	5 U	**1.4**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-DUP-060516	FD	5/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	**1.5**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-061126	N	11/26/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	**0.8**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-16A	MW-16A-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U	5 U	**1.3**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-071128	N	11/28/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.2**	0.2 U	--	0.2 U	0.2 U	1 U	**1.3**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-16A	MW-16A-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U	5 U	**1.4**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U	5 U	**1.6**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-091116	N	11/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2**	1 U	--	1 U	1 U	5 U	**1.5**	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16A	MW-16A-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16A	MW-16A-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-16A	MW-16A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-16A	MW-16A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-130521	N	5/21/2013	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-140508	N	5/8/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16A	MW-16A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16A	MW-16A-161102	N	11/2/2016	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**12 J**	--	--	0.5 UJ	5 UJ
BDC-MW-16A	MW-16A-170502	N	5/2/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5 UJ	--	--	0.5 UJ	5 UJ
BDC-MW-16A	MW-16A-171108	N	11/8/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1.0 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5.0 UJ	--	--	0.5 UJ	5.0 UJ
BDC-MW-16A	MW-16A-180501	N	5/1/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 U	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-16A	MW-16A-181105	N	11/5/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 UJ	5.00 U	5.00 U	2.00 U	5.00 UJ	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-16A	MW-16A-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-16A	MW-16A-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-16C	16C1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**8.1**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.2**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-16C	MW-16C-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-16A	MW-16A-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16A	MW-16A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.2 U	0.2 U
BDC-MW-16A	MW-16A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-140508	N	5/8/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**10**	--	--	--	--
BDC-MW-16A	MW-16A-161102	N	11/2/2016	0.5 UJ	0.5 UJ	5 UJ	**11 J**	25 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	**0.5 J**	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**14 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-16A	MW-16A-170502	N	5/2/2017	0.5 UJ	0.5 UJ	5 UJ	**5.3 J**	25 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**5.7 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-16A	MW-16A-171108	N	11/8/2017	0.5 UJ	0.5 UJ	5.0 UJ	5.0 UJ	25 UJ	5.0 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**0.7 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-16A	MW-16A-180501	N	5/1/2018	2.00 U	2.00 U	50.0 U	50.0 UJ	50.0 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 UJ	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-16A	MW-16A-181105	N	11/5/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-16A	MW-16A-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.35**	0.20 U	--	0.20 U	0.20 U
BDC-MW-16A	MW-16A-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	**6.33 J**	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.32**	0.20 U	--	0.20 U	0.20 U
BDC-MW-16C	16C1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**3.2**	--	--	--	--
BDC-MW-16C	MW-16C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**14**	--	--	--	--
BDC-MW-16C	MW-16C-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**11.83**	--	--	--	--
BDC-MW-16C	MW-16C-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.24 J**	--	--	--	--
BDC-MW-16C	MW-16C-960201	N	2/1/1996	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--
BDC-MW-16C	MW-16C-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**5.66**	--	--	--	--
BDC-MW-16C	MW-16C-960801	N	8/1/1996	--	--	--	--	--	--	**3.3**	--	--	--	--	--	--	--	--	--	--	--	--	**2.6**	--	--	--	--
BDC-MW-16C	MW-16C-961101	N	11/1/1996	--	--	--	--	--	--	**31.2**	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--
BDC-MW-16C	MW-16C-970201	N	2/1/1997	--	--	--	--	--	--	**11.3**	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--
BDC-MW-16C	MW-16C-970501	N	5/1/1997	--	--	--	--	--	--	**14.4**	--	--	--	--	--	--	--	--	--	--	--	--	**1.13**	--	--	--	--
BDC-MW-16C	MW-16C-970801	N	8/1/1997	--	--	--	--	--	--	**18.8**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-16C	MW-16C-971101	N	11/1/1997	--	--	--	--	--	--	**1.7**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-16C	MW-16C-980601	N	6/1/1998	--	--	--	--	--	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-16C	MW-16C-981020	N	10/20/1998	1 U	1 U	1 U	1 U	5 U	5 U	**8.3**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**10**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16A	MW-16A-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U	5 U	**1.4**	1 U	2 U	--	5 UJ	1 U
BDC-MW-16A	MW-16A-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U	5 UJ	**1.1**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-110504	N	5/4/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U	5 U	**1.4**	1 U	2 U	--	5 U	1 U
BDC-MW-16A	MW-16A-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.4**	0.2 U	--	0.2 U	0.2 U	1 U	**1.3**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-16A	MW-16A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.6**	0.2 U	--	0.2 U	0.2 U	5 U	**1.7**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-16A	MW-16A-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.1**	0.2 U	--	0.2 U	0.2 U	5 U	**1.5**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-16A	MW-16A-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.4**	0.5 U	--	0.5 U	0.5 U	5 UJ	**1.5**	0.5 U	0.5 U	--	0.5 U	0.5 U
BDC-MW-16A	MW-16A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.1**	0.2 U	--	0.2 U	0.2 U	5 U	**1.8**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-16A	MW-16A-140508	N	5/8/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.4**	0.2 U	--	0.2 U	0.2 U	5 UJ	**1.6**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-16A	MW-16A-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.6**	0.2 U	--	0.2 U	0.2 U	5 U	**1.5**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-16A	MW-16A-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.4**	0.2 U	--	0.2 U	0.2 U	5 U	**1.4**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-16A	MW-16A-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.5**	0.2 U	--	0.2 U	0.2 U	5 UJ	**1.5**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-16A	MW-16A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.8**	--	--	--	--	--	**0.7**	--	--	--	--	0.2 U
BDC-MW-16A	MW-16A-161102	N	11/2/2016	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**0.6 J**	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**0.6 J**	**0.4 J**	--	0.2 UJ	0.2 UJ	5 UJ	**0.3 J**	0.5 UJ	0.5 UJ	--	0.5 UJ	**0.5 J**
BDC-MW-16A	MW-16A-170502	N	5/2/2017	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**0.7 J**	**0.7 J**	--	**0.3 J**	0.2 UJ	5 UJ	**0.2 J**	0.5 UJ	0.5 UJ	--	0.5 UJ	**3.1 J**
BDC-MW-16A	MW-16A-171108	N	11/8/2017	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**0.9 J**	--	**0.3 J**	0.2 UJ	5.0 UJ	0.2 UJ	0.5 UJ	--	--	0.5 UJ	**0.7 J**
BDC-MW-16A	MW-16A-180501	N	5/1/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 UJ	2.00 U
BDC-MW-16A	MW-16A-181105	N	11/5/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-16A	MW-16A-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.22**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-16A	MW-16A-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.36**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.22**
BDC-MW-16C	16C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND	--	--	--	ND	--	--	--	--	**4.0 J**
BDC-MW-16C	MW-16C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**1.3**	--	--	--	--	**3.4**
BDC-MW-16C	MW-16C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**15**
BDC-MW-16C	MW-16C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**23.46**
BDC-MW-16C	MW-16C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**38.59**
BDC-MW-16C	MW-16C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**45.16**
BDC-MW-16C	MW-16C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**31.71**
BDC-MW-16C	MW-16C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**20.8**
BDC-MW-16C	MW-16C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**11.8**
BDC-MW-16C	MW-16C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**11.3**
BDC-MW-16C	MW-16C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**9.1**
BDC-MW-16C	MW-16C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**3**
BDC-MW-16C	MW-16C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-16C	MW-16C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.4**
BDC-MW-16C	MW-16C-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-16C	MW-16C-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.9**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16C	MW-16C-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-000601	N	6/1/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-010605	N	6/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-031118	N	11/18/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-060516	N	5/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-061126	N	11/26/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-16C	MW-16C-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-071128	N	11/28/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-16C	MW-16C-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-091116	N	11/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-16C	MW-16C-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-16C	MW-16C-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-16C	MW-16C-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-130521	N	5/21/2013	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-140508	N	5/8/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-16C	MW-16C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-16C	MW-16C-161102	N	11/2/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-16C	MW-16C-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-16C	MW-16C-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**6.4**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-000601	N	6/1/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**7.8**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**4.33**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-010605	N	6/5/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**4.99 J**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	**4.5**	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	**1.7**	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	**2.6**	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	**1.2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-031118	N	11/18/2003	1 U	1 U	5 U	5 U	50 U	1 U	**2.8**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-041025	N	10/25/2004	1 U	1 U	5 U	5 U	50 U	1 U	**1**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.8**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.6**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-060516	N	5/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.2**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-061126	N	11/26/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-16C	MW-16C-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**8.8**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-071128	N	11/28/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**7.8**	0.2 U	--	0.2 U	0.2 U
BDC-MW-16C	MW-16C-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.3**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**5**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-091116	N	11/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.9**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.7**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.3**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.7**	1 U	--	1 U	1 U
BDC-MW-16C	MW-16C-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**3.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-16C	MW-16C-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**4.8**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**4.9**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.9**	0.5 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**4.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-140508	N	5/8/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**3.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**3.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**2.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**2.7**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--	--	--
BDC-MW-16C	MW-16C-161102	N	11/2/2016	0.5 U	0.5 U	5 UJ	5 U	25 UJ	5 U	**0.4**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**1.9**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16C	MW-16C-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-16C	MW-16C-000601	N	6/1/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-16C	MW-16C-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-16C	MW-16C-010605	N	6/5/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-16C	MW-16C-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-16C	MW-16C-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-16C	MW-16C-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**1.4**
BDC-MW-16C	MW-16C-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.8**
BDC-MW-16C	MW-16C-031118	N	11/18/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.6**
BDC-MW-16C	MW-16C-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**5.4**
BDC-MW-16C	MW-16C-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**8.5**
BDC-MW-16C	MW-16C-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**7.7**
BDC-MW-16C	MW-16C-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**12**
BDC-MW-16C	MW-16C-060516	N	5/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.3**
BDC-MW-16C	MW-16C-061126	N	11/26/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.2**	0.2 U	--	0.2 U	0.2 U	1 U	**2.3**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-16C	MW-16C-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**10**
BDC-MW-16C	MW-16C-071128	N	11/28/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**8.9**
BDC-MW-16C	MW-16C-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.3**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**7.9**
BDC-MW-16C	MW-16C-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**8.8**
BDC-MW-16C	MW-16C-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.3**
BDC-MW-16C	MW-16C-091116	N	11/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**5.6**
BDC-MW-16C	MW-16C-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	**3.4**
BDC-MW-16C	MW-16C-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	**2.8**
BDC-MW-16C	MW-16C-110504	N	5/4/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.2**
BDC-MW-16C	MW-16C-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	**0.2**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**2.5**
BDC-MW-16C	MW-16C-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**4.2**
BDC-MW-16C	MW-16C-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**3.8**
BDC-MW-16C	MW-16C-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	5 UJ	0.5 U	0.5 U	0.5 U	--	0.5 U	**2.8**
BDC-MW-16C	MW-16C-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.1**
BDC-MW-16C	MW-16C-140508	N	5/8/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.2**
BDC-MW-16C	MW-16C-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.3**
BDC-MW-16C	MW-16C-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.2**
BDC-MW-16C	MW-16C-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.2**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.1**
BDC-MW-16C	MW-16C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.3**
BDC-MW-16C	MW-16C-161102	N	11/2/2016	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.2**	--	**0.2**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.3**
BDC-MW-16C	MW-16C-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**10**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.2**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Choronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16C	MW-16C-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-16C	MW-16C-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-16C	MW-16C-181105	N	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 UJ	--	--	0.20 U	5.00 U
BDC-MW-16C	MW-16C-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-16C	MW-16C-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-17A	MW-17A-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-970515	N	5/15/1997	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-17A	MW-17A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-17A	MW-17A-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-011216	N	12/16/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-17A	MW-17A-070521	N	5/21/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-17A	DC-MW17A-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-16C	MW-16C-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.7**	0.2 U	--	0.5 U	0.5 U
BDC-MW-16C	MW-16C-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	5.00 UJ	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-16C	MW-16C-181105	N	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	**0.50 J**	0.20 U	--	0.20 U	0.20 U
BDC-MW-16C	MW-16C-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.41**	0.20 U	--	0.20 U	0.20 U
BDC-MW-16C	MW-16C-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.58**	0.20 U	--	0.20 U	0.20 U
BDC-MW-17A	MW-17A-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--
BDC-MW-17A	MW-17A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.3**	--	--	--	--
BDC-MW-17A	MW-17A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.38**	--	--	--	--
BDC-MW-17A	MW-17A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-17A	MW-17A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-17A	MW-17A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.09**	--	--	--	--
BDC-MW-17A	MW-17A-960801	N	8/1/1996	--	--	--	--	--	--	**78.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17A	MW-17A-961101	N	11/1/1996	--	--	--	--	--	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--
BDC-MW-17A	MW-17A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-MW-17A	MW-17A-970515	N	5/15/1997	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.9 J**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.13**	--	--	--	--
BDC-MW-17A	MW-17A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17A	MW-17A-980601	N	6/1/1998	--	--	--	--	--	--	**11.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.3**	--	--	--	--
BDC-MW-17A	MW-17A-981020	N	10/20/1998	1 U	1 U	1 U	**3.9**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.8**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	**4.1**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	**4.3**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.5**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-011216	N	12/16/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**2**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-041025	N	10/25/2004	1 U	1 U	5 U	**6.7**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1**	0.2 U	--	0.2 U	0.2 U
BDC-MW-17A	MW-17A-070521	N	5/21/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1**	0.2 U	--	0.2 U	0.2 U
BDC-MW-17A	DC-MW17A-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-16C	MW-16C-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.9**	--	0.2 U	0.2 U	5.0 U	0.2 U	0.5 U	--	--	0.5 U	**0.4**
BDC-MW-16C	MW-16C-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.27**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 UJ	0.20 U
BDC-MW-16C	MW-16C-181105	N	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**6.47 J**	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 UJ	0.20 U	0.20 U	--	--	0.20 UJ	**0.28 J**
BDC-MW-16C	MW-16C-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.33**
BDC-MW-16C	MW-16C-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.48**
BDC-MW-17A	MW-17A-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**3.7**	--	--	--	--	ND
BDC-MW-17A	MW-17A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**36**	--	--	--	--	--	**7.2**	--	--	--	--	1 U
BDC-MW-17A	MW-17A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.39**	--	--	--	--	--	**17.42**	--	--	--	--	1 U
BDC-MW-17A	MW-17A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	**17.04**	--	--	--	--	5 U
BDC-MW-17A	MW-17A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	**5**	--	--	--	--	5 U
BDC-MW-17A	MW-17A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.55**	--	--	--	--	--	**7.28**	--	--	--	--	1 U
BDC-MW-17A	MW-17A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**62**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1**
BDC-MW-17A	MW-17A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.3**	--	--	--	--	--	**9.8**	--	--	--	--	1 U
BDC-MW-17A	MW-17A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**2.7**	--	--	--	--	--	**17.5**	--	--	--	--	1 U
BDC-MW-17A	MW-17A-970515	N	5/15/1997	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**1.9 J**	1 U	2 U	1 U	1 U	--	**14.9**	1 U	--	--	--	1 U
BDC-MW-17A	MW-17A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**2.2**	--	--	--	--	--	**18**	--	--	--	--	1 U
BDC-MW-17A	MW-17A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1**	--	--	--	--	--	**2**	--	--	--	--	1 U
BDC-MW-17A	MW-17A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**2.6**	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17A	MW-17A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.4**	1 U	2 U	1 U	1 U	--	**12.4**	1 U	--	--	--	1 U
BDC-MW-17A	MW-17A-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.5**	1 U	1 U	1 U	1 U	--	**11.1**	1.46 U	--	--	--	1 U
BDC-MW-17A	MW-17A-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.1**	1 U	1 U	1 U	1 U	--	**11.5**	1.46 U	--	--	--	1 U
BDC-MW-17A	MW-17A-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.6**	1 U	1 U	1 U	1 U	--	**6.6**	1.46 U	--	--	--	1 U
BDC-MW-17A	MW-17A-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**4.15**	1 U	1 U	1 U	1 U	--	**13.99**	1.46 U	--	--	--	1 U
BDC-MW-17A	MW-17A-011216	N	12/16/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**5.9**	1.5 U	--	--	--	1 U
BDC-MW-17A	MW-17A-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.8**	1 U	--	1 U	1 U	5 U	**7.4**	1 U	2.0 U	--	5 U	1 U
BDC-MW-17A	MW-17A-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.6**	1 U	--	1 U	1 U	5 U	**7.5**	1 U	2.0 U	--	5 U	1 U
BDC-MW-17A	MW-17A-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.6**	1 U	--	1 U	1 U	5 U	**7.4**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.8**	1 U	--	1 U	1 U	5 U	**7.9**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.8**	1 U	--	1 U	1 U	5 U	**6.5**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**5.2**	1 U	--	1 U	1 U	5 U	**4.8**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4**	1 U	--	1 U	1 U	5 U	**5.4**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.2**	1 U	2 U	1 U	1 U	5 U	**4.4**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.2**	0.2 U	--	0.2 U	0.2 U	1 U	**6.3**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-17A	MW-17A-070521	N	5/21/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**4.7**	0.2 U	--	0.2 U	0.2 U	1 U	**5.3**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-17A	DC-MW17A-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.2**	1.0 U	--	1.0 U	1.0 U	5.0 U	**4.3**	1.0 U	--	--	5.0 U	1.0 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-17A	MW-17A-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-17A	MW-17A-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-091112	N	11/12/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-101108	N	11/8/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-110503	N	5/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 UJ
BDC-MW-17A	MW-17A-111103	N	11/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-17A	MW-17A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-17A	MW-17A-121113	N	11/13/2012	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5 UJ	--	--	0.5 UJ	5 UJ
BDC-MW-17A	MW-17A-130520	N	5/20/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-17A	MW-17A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-17A	MW-17A-140506	N	5/6/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-17A	MW-17A-141104	N	11/4/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-17A	MW-17A-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-17A	MW-17A-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-17A	MW-17A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17A	MW-17A-170503	N	5/3/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	**8.5**
BDC-MW-17A	MW-17A-171107	N	11/7/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1.0 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5.0 UJ	--	--	0.5 UJ	5.0 UJ
BDC-MW-17A	MW-17A-180501	N	5/1/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 U	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-17A	MW-17A-181105	N	11/5/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 UJ	5.00 U	5.00 U	2.00 U	5.00 UJ	--	2.00 U	2.00 UJ	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-17A	MW-17A-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-17A	MW-17A-191105	N	11/5/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-17C	MW-17C-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-970515	N	5/15/1997	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-17A	MW-17A-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.8**	0.2 U	--	0.2 U	0.2 U
BDC-MW-17A	MW-17A-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-091112	N	11/12/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.1**	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-101108	N	11/8/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-110503	N	5/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-111103	N	11/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U
BDC-MW-17A	MW-17A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.9**	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-121113	N	11/13/2012	0.5 UJ	0.5 UJ	5 UJ	5 UJ	25 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	**0.3 J**	0.5 UJ	**0.9 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-17A	MW-17A-130520	N	5/20/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.4**	0.5 U	**0.8**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.3**	0.5 U	**1**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-140506	N	5/6/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	**0.2**	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-141104	N	11/4/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.9**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**1.1**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8**	--	--	--	--
BDC-MW-17A	MW-17A-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.2**	--	--	--	--
BDC-MW-17A	MW-17A-170503	N	5/3/2017	0.5 U	0.5 U	5 U	**6.6**	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.8**	0.2 U	--	0.5 U	0.5 U
BDC-MW-17A	MW-17A-171107	N	11/7/2017	0.5 UJ	0.5 UJ	5.0 UJ	**5.7 J**	25 UJ	5.0 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**1.3 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-17A	MW-17A-180501	N	5/1/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-17A	MW-17A-181105	N	11/5/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-17A	MW-17A-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	**6.23**	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-17A	MW-17A-191105	N	11/5/2019	0.20 U	0.20 U	5.00 U	**7.98**	5.00 U	1.00 UJ	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 UJ	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-17C	MW-17C-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-17C	MW-17C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**5.3**	--	--	--	--
BDC-MW-17C	MW-17C-950501	N	5/1/1995	--	--	--	--	--	--	**142.64**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17C	MW-17C-951001	N	10/1/1995	--	--	--	--	--	--	**73.23**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-17C	MW-17C-960201	N	2/1/1996	--	--	--	--	--	--	**34.26**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-17C	MW-17C-960501	N	5/1/1996	--	--	--	--	--	--	**92.46**	--	--	--	--	--	--	--	--	--	--	--	--	**1.19**	--	--	--	--
BDC-MW-17C	MW-17C-960801	N	8/1/1996	--	--	--	--	--	--	**40.6**	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--
BDC-MW-17C	MW-17C-961101	N	11/1/1996	--	--	--	--	--	--	**22.5**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17C	MW-17C-970201	N	2/1/1997	--	--	--	--	--	--	**36.6**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17C	MW-17C-970501	N	5/1/1997	--	--	--	--	--	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17C	MW-17C-970515	N	5/15/1997	1 U	1 U	1 U	1 U	--	--	**34.7**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-17A	MW-17A-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**4.3**	0.2 U	--	0.2 U	0.2 U	1 U	**5.1**	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-17A	MW-17A-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.2**	1 U	--	1 U	1 U	5 U	**5.2**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.2**	1 U	--	1 U	1 U	5 U	**4.9**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-091112	N	11/12/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.7**	1 U	--	1 U	1 U	5 U	**4.5**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**4**	1 U	--	1 U	1 U	5 U	**3.1**	1 U	2 U	--	5 UJ	1 U
BDC-MW-17A	MW-17A-101108	N	11/8/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U	5 U	**4.8**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-110503	N	5/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.1**	1 U	--	1 U	1 U	5 U	**2.2**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-111103	N	11/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.6**	1 U	--	1 U	1 U	5 U	**2.8**	1 U	2 U	--	5 U	1 U
BDC-MW-17A	MW-17A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.1**	0.2 U	--	0.2 U	0.2 U	5 U	**2**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-17A	MW-17A-121113	N	11/13/2012	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**2.8 J**	0.2 UJ	--	0.2 UJ	0.2 UJ	5 UJ	**3.5 J**	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ
BDC-MW-17A	MW-17A-130520	N	5/20/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.6**	0.2 U	--	0.2 U	0.2 U	5 UJ	**2.8**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-17A	MW-17A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.9**	0.2 U	--	0.2 U	0.2 U	5 U	**3.4**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-17A	MW-17A-140506	N	5/6/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.6**	0.2 U	--	0.2 U	0.2 U	5 UJ	**2.6**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-17A	MW-17A-141104	N	11/4/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.9**	0.2 U	--	0.2 U	0.2 U	5 U	**3.1**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-17A	MW-17A-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.4**	0.2 U	--	0.2 U	0.2 U	5 U	**2.3**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-17A	MW-17A-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**3.4**	0.2 U	--	0.2 U	0.2 U	5 UJ	**2.6**	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-17A	MW-17A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	2 U
BDC-MW-17A	MW-17A-161101	N	11/1/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.4**	--	--	--	--	**0.8**
BDC-MW-17A	MW-17A-170503	N	5/3/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**2**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.2**
BDC-MW-17A	MW-17A-171107	N	11/7/2017	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**1.9 J**	--	0.2 UJ	0.2 UJ	5.0 UJ	0.2 UJ	0.5 UJ	--	--	0.5 UJ	**5.9 J**
BDC-MW-17A	MW-17A-180501	N	5/1/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 UJ	**2.82**
BDC-MW-17A	MW-17A-181105	N	11/5/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-17A	MW-17A-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.86**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.27**
BDC-MW-17A	MW-17A-191105	N	11/5/2019	--	0.20 U	0.20 U	0.50 UJ	0.20 U	0.40 U	1.00 UJ	1.00 U	0.50 U	0.20 UJ	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.45**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-17C	MW-17C-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-17C	MW-17C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**36**	--	--	--	--	--	**2.1**	--	--	--	--	**10**
BDC-MW-17C	MW-17C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**2.32**
BDC-MW-17C	MW-17C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-17C	MW-17C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-17C	MW-17C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17C	MW-17C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.6**	--	--	--	--	--	**14.1**	--	--	--	--	1 U
BDC-MW-17C	MW-17C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	**26.6**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17C	MW-17C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17C	MW-17C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	**0.6**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17C	MW-17C-970515	N	5/15/1997	1 U	1 U	1 U	1 U	1 U	--	--	1 U	**10.6**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-17C	MW-17C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17C	MW-17C-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-17C	MW-17C-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17C	MW-17C-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17C	MW-17C-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17C	MW-17C-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-970515	N	5/15/1997	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-17D	MW-17D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-17D	MW-17D-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-17C	MW-17C-970801	N	8/1/1997	--	--	--	--	--	--	**21.8**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17C	MW-17C-971101	N	11/1/1997	--	--	--	--	--	--	**8.53**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17C	MW-17C-980601	N	6/1/1998	--	--	--	--	--	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17C	MW-17C-981020	N	10/20/1998	1 U	1 U	1 U	**4**	5 U	5 U	**2.7**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17C	MW-17C-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**3.7**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17C	MW-17C-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2.4**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17C	MW-17C-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2.1**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17C	MW-17C-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-17D	MW-17D-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--
BDC-MW-17D	MW-17D-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-17D	MW-17D-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-17D	MW-17D-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-970515	N	5/15/1997	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-17D	MW-17D-981020	N	10/20/1998	1 U	1 U	1 U	**3.3**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-17D	MW-17D-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-18A	MW-18A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-18A	MW-18A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-18A	MW-18A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-17C	MW-17C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	**37.3**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17C	MW-17C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**106**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17C	MW-17C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17C	MW-17C-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-17C	MW-17C-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**31.9**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-17C	MW-17C-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**16.6**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-17C	MW-17C-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**13.7**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-17C	MW-17C-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**12.12**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-17D	MW-17D-890801	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-17D	MW-17D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-17D	MW-17D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**46**	--	--	--	--	--	**2.3**	--	--	--	--	1 U
BDC-MW-17D	MW-17D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-17D	MW-17D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-17D	MW-17D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-970515	N	5/15/1997	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-17D	MW-17D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-17D	MW-17D-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-17D	MW-17D-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-17D	MW-17D-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-17D	MW-17D-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-17D	MW-17D-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18A	MW-18A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-18A	MW-18A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.4**	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-18A	MW-18A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-18A	MW-18A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-18A	MW-18A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-18A	MW-18A-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18A	MW-18A-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	--	**2.4**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-18C	MW-18C-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	**1.7**	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-011216	N	12/16/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 UJ	5 UJ	--	1 U	5 U
BDC-MW-18C	MW-18C-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-18A	MW-18A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18A	MW-18A-981020	N	10/20/1998	1 U	1 U	1 U	**2.5**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18A	MW-18A-060515	N	5/15/2006	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-18C	MW-18C-910201	N	2/1/1991	--	--	--	--	--	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-18C	MW-18C-940101	N	1/1/1994	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-MW-18C	MW-18C-950501	N	5/1/1995	--	--	--	--	--	--	**8.77**	--	--	--	--	--	--	--	--	--	--	--	--	**2.02**	--	--	--	--
BDC-MW-18C	MW-18C-951001	N	10/1/1995	--	--	--	--	--	--	**5.28 J**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-18C	MW-18C-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-18C	MW-18C-960501	N	5/1/1996	--	--	--	--	--	--	**5.79**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18C	MW-18C-960801	N	8/1/1996	--	--	--	--	--	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-MW-18C	MW-18C-961101	N	11/1/1996	--	--	--	--	--	--	**3.1**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18C	MW-18C-970201	N	2/1/1997	--	--	--	--	--	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18C	MW-18C-970501	N	5/1/1997	--	--	--	--	--	--	**4**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18C	MW-18C-970801	N	8/1/1997	--	--	--	--	--	--	**2.9**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18C	MW-18C-971101	N	11/1/1997	--	--	--	--	--	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-MW-18C	MW-18C-980601	N	6/1/1998	--	--	--	--	--	--	**1.5**	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--
BDC-MW-18C	MW-18C-981021	N	10/21/1998	1 U	1 U	1 U	**3.3**	5 U	5 U	**1.4**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.8**	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.5**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.1**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.26**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.59**	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.42 J**	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-011216	N	12/16/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-021203	N	12/3/2002	1 U	1 U	5 U	5 UJ	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	**2.2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-18A	MW-18A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18A	MW-18A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-18A	MW-18A-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18A	MW-18A-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18A	MW-18A-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18A	MW-18A-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18A	MW-18A-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18A	MW-18A-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18A	MW-18A-060515	N	5/15/2006	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
BDC-MW-18A	MW-18A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18C	MW-18C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-18C	MW-18C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.6**	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-18C	MW-18C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-18C	MW-18C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.1**
BDC-MW-18C	MW-18C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18C	MW-18C-981021	N	10/21/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-18C	MW-18C-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18C	MW-18C-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18C	MW-18C-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.1**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18C	MW-18C-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18C	MW-18C-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18C	MW-18C-011216	N	12/16/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-18C	MW-18C-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-18C	MW-18C-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-18C	MW-18C-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-18C	MW-18C-031116	N	11/16/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-18C	MW-18C-070521	N	5/21/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-18C	MW-18C-071128	N	11/28/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-18C	MW-18C-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**6.3**	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18C	MW-18C-091117	N	11/17/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-18D	MW-18D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-951027	N	10/27/1995	--	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	5 U	--	5 U	--	20 U	10 U	--	--	5 U
BDC-MW-18D	MW-18D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-18D	MW-18D-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-18D	MW-18D-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-001203	N	12/3/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-18C	MW-18C-031116	N	11/16/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-041025	N	10/25/2004	1 U	1 U	5 U	**5.1**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-18C	MW-18C-070521	N	5/21/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-18C	MW-18C-071128	N	11/28/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-18C	MW-18C-081123	N	11/23/2008	1 U	1 U	5 U	**16**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18C	MW-18C-091117	N	11/17/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-18D	MW-18D-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18D	MW-18D-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2.02**	--	--	--	--
BDC-MW-18D	MW-18D-951027	N	10/27/1995	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	--
BDC-MW-18D	MW-18D-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-18D	MW-18D-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18D	MW-18D-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-MW-18D	MW-18D-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18D	MW-18D-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18D	MW-18D-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18D	MW-18D-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-18D	MW-18D-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-MW-18D	MW-18D-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--
BDC-MW-18D	MW-18D-981020	N	10/20/1998	1 U	1 U	1 U	**3.1**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-001203	N	12/3/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-18D	MW-18D-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**1.4**	--	--	--	--
BDC-MW-19A	MW-19A-940101	N	1/1/1994	--	--	--	--	--	--	**1.1**	--	--	--	--	--	--	--	--	--	--	--	--	**2.4**	--	--	--	--
BDC-MW-19A	MW-19A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-18C	MW-18C-031116	N	11/16/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-18C	MW-18C-070521	N	5/21/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**0.6**	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**0.2**
BDC-MW-18C	MW-18C-071128	N	11/28/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**0.2**
BDC-MW-18C	MW-18C-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**86**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**47**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18C	MW-18C-091117	N	11/17/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-18D	MW-18D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-18D	MW-18D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.6**	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-951027	N	10/27/1995	--	5 U	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	5 U	5 U	10 U	5 U	5 U	--	5 U	--	--	--	--	5 U
BDC-MW-18D	MW-18D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-18D	MW-18D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-18D	MW-18D-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-18D	MW-18D-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18D	MW-18D-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18D	MW-18D-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18D	MW-18D-001203	N	12/3/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-18D	MW-18D-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19A	MW-19A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--	--	**1.5**	--	--	--	--	ND
BDC-MW-19A	MW-19A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6**	--	--	--	--	--	**1.5**	--	--	--	--	1 U
BDC-MW-19A	MW-19A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-19A	MW-19A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	MW-19A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-19A	MW-19A-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-991119	N	11/19/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-000601	N	6/1/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-050221	N	2/21/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-060222	N	2/22/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-060815	N	8/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-19A	DC-MW19A-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-19A	MW-19A-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	DC-MW19A-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-19A	MW-19A-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19A	MW-19A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-19A	MW-19A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-19A	MW-19A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19A	MW-19A-981020	N	10/20/1998	1 U	1 U	1 U	**3.6**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-991119	N	11/19/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-000601	N	6/1/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-050221	N	2/21/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-050822	N	8/22/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-060222	N	2/22/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-060815	N	8/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-19A	DC-MW19A-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-19A	MW-19A-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	DC-MW19A-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-19A	MW-19A-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-091118	N	11/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-19A	MW-19A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-19A	DC-MW19A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-19A	DC-MW19A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-19A	DC-MW19A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-19A	DC-MW19A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-19A	MW-19A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-19A	MW-19A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19A	MW-19A-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-19A	MW-19A-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19A	MW-19A-991119	N	11/19/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19A	MW-19A-000601	N	6/1/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19A	MW-19A-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19A	MW-19A-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.54 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19A	MW-19A-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-050221	N	2/21/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-060222	N	2/22/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-060815	N	8/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	**0.2**	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-19A	DC-MW19A-070222	N	2/22/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-19A	MW-19A-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	DC-MW19A-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-19A	MW-19A-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-091118	N	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19A	MW-19A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19A	DC-MW19A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-19C	MW-19C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19C	MW-19C-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-19C	MW-19C-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-991119	N	11/19/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-000601	N	6/1/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-011216	N	12/16/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-040502	N	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-DUP-040502	FD	5/2/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**89**	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-19C	MW-19C-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	DC-MW19C-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-19C	MW-19C-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19C	MW-19C-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-19C	MW-19C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-19C	MW-19C-940101	N	1/1/1994	--	--	--	--	--	--	**61**	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-MW-19C	MW-19C-950501	N	5/1/1995	--	--	--	--	--	--	**17.57**	--	--	--	--	--	--	--	--	--	--	--	--	**1.17**	--	--	--	--
BDC-MW-19C	MW-19C-951001	N	10/1/1995	--	--	--	--	--	--	**13.44**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-19C	MW-19C-960201	N	2/1/1996	--	--	--	--	--	--	**7.14 J**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-19C	MW-19C-960501	N	5/1/1996	--	--	--	--	--	--	**10.46**	--	--	--	--	--	--	--	--	--	--	--	--	**1.37**	--	--	--	--
BDC-MW-19C	MW-19C-960801	N	8/1/1996	--	--	--	--	--	--	**6.8**	--	--	--	--	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--
BDC-MW-19C	MW-19C-961101	N	11/1/1996	--	--	--	--	--	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19C	MW-19C-970201	N	2/1/1997	--	--	--	--	--	--	**6.8**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19C	MW-19C-970501	N	5/1/1997	--	--	--	--	--	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-MW-19C	MW-19C-970801	N	8/1/1997	--	--	--	--	--	--	**3.4**	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-MW-19C	MW-19C-971101	N	11/1/1997	--	--	--	--	--	--	**2.9**	--	--	--	--	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--
BDC-MW-19C	MW-19C-980601	N	6/1/1998	--	--	--	--	--	--	**2.2**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--
BDC-MW-19C	MW-19C-981020	N	10/20/1998	1 U	1 U	1 U	**3.7**	5 U	5 U	**1.8**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.8**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-991119	N	11/19/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.3**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-000601	N	6/1/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.2**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.03**	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.43**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.3 J**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.01 J**	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-011216	N	12/16/2001	1 U	1 U	1 U	**3.7**	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-040502	N	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-DUP-040502	FD	5/2/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-041025	N	10/25/2004	1 U	1 U	5 U	**8**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-051115	N	11/15/2005	1 U	1 U	5 U	**99**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-061127	N	11/27/2006	0.2 U	0.2 U	1 U	**4.2**	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-19C	MW-19C-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	DC-MW19C-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-19C	MW-19C-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19C	MW-19C-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-19C	MW-19C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-19C	MW-19C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.5**	--	--	--	--	--	1 U	--	--	--	--	**5.5**
BDC-MW-19C	MW-19C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-19C	MW-19C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-19C	MW-19C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19C	MW-19C-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-19C	MW-19C-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19C	MW-19C-991119	N	11/19/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19C	MW-19C-000601	N	6/1/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19C	MW-19C-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19C	MW-19C-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19C	MW-19C-011216	N	12/16/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-19C	MW-19C-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-19C	MW-19C-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-19C	MW-19C-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-040502	N	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-DUP-040502	FD	5/2/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	7.8 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**0.5**	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-19C	MW-19C-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	DC-MW19C-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-19C	MW-19C-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19C	MW-19C-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-19C	MW-19C-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-19D	MW-19D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-19D	MW-19D-981020	N	10/20/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-19D	MW-19D-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-991119	N	11/19/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-000601	N	6/1/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20A	MW-20A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-20A	MW-20A-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-19C	MW-19C-091118	N	11/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-19D	MW-19D-940101	N	1/1/1994	--	--	--	--	--	--	**3.9**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-950501	N	5/1/1995	--	--	--	--	--	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-19D	MW-19D-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-19D	MW-19D-960501	N	5/1/1996	--	--	--	--	--	--	**2.42**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-960801	N	8/1/1996	--	--	--	--	--	--	**2.2**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-961101	N	11/1/1996	--	--	--	--	--	--	**1.6**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-970201	N	2/1/1997	--	--	--	--	--	--	**1.9**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-970501	N	5/1/1997	--	--	--	--	--	--	**1.7**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-19D	MW-19D-981020	N	10/20/1998	1 U	1 U	1 U	**4.1**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-991119	N	11/19/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-000601	N	6/1/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-19D	MW-19D-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-20A	MW-20A-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-20A	MW-20A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-20A	MW-20A-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-20A	MW-20A-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20A	MW-20A-981019	N	10/19/1998	1 U	1 U	1 U	**2.7**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-19C	MW-19C-091118	N	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-19D	MW-19D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-19D	MW-19D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.5**	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-19D	MW-19D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-19D	MW-19D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-19D	MW-19D-981020	N	10/20/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-19D	MW-19D-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19D	MW-19D-991119	N	11/19/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19D	MW-19D-000601	N	6/1/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19D	MW-19D-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-19D	MW-19D-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20A	MW-20A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**1.9**	--	--	--	--	ND
BDC-MW-20A	MW-20A-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**0.8**	--	--	--	--	ND
BDC-MW-20A	MW-20A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.4**	--	--	--	--	--	**1.1**	--	--	--	--	1 U
BDC-MW-20A	MW-20A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-20A	MW-20A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-20A	MW-20A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20A	MW-20A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-20A	MW-20A-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-20A	MW-20A-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-20C	MW-20C-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-011216	N	12/16/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-020605	N	6/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-021203	N	12/3/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-051115	N	11/15/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-061129	N	11/29/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-20C	MW-20C-070521	N	5/21/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.4**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-20A	MW-20A-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20A	MW-20A-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-910201	N	2/1/1991	--	--	--	--	--	--	**0.7**	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--
BDC-MW-20C	MW-20C-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**20**	--	--	--	--
BDC-MW-20C	MW-20C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--
BDC-MW-20C	MW-20C-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**7.34**	--	--	--	--
BDC-MW-20C	MW-20C-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**6.06 J**	--	--	--	--
BDC-MW-20C	MW-20C-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-20C	MW-20C-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2.46**	--	--	--	--
BDC-MW-20C	MW-20C-960801	N	8/1/1996	--	--	--	--	--	--	**1.1**	--	--	--	--	--	--	--	--	--	--	--	--	**2.5**	--	--	--	--
BDC-MW-20C	MW-20C-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--
BDC-MW-20C	MW-20C-970201	N	2/1/1997	--	--	--	--	--	--	**1.1**	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--
BDC-MW-20C	MW-20C-970501	N	5/1/1997	--	--	--	--	--	--	**1.1**	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--
BDC-MW-20C	MW-20C-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20C	MW-20C-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20C	MW-20C-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20C	MW-20C-981019	N	10/19/1998	1 U	1 U	1 U	1 U	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.09 J**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-011216	N	12/16/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-020605	N	6/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-021203	N	12/3/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	**1.1**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-041025	N	10/25/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-051115	N	11/15/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.1**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-061129	N	11/29/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.5**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.1**	0.2 U	--	0.2 U	0.2 U
BDC-MW-20C	MW-20C-070521	N	5/21/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.6**	0.2 U	--	0.2 U	0.2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-20A	MW-20A-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20A	MW-20A-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20A	MW-20A-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20A	MW-20A-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**5.48 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20C	MW-20C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**3.1**	--	--	--	--	ND
BDC-MW-20C	MW-20C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**1.7**	--	--	--	--	**28**
BDC-MW-20C	MW-20C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--	--	**1.8**	--	--	--	--	**47**
BDC-MW-20C	MW-20C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**20.12**
BDC-MW-20C	MW-20C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**12.63**
BDC-MW-20C	MW-20C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**13.77**
BDC-MW-20C	MW-20C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**8.32**
BDC-MW-20C	MW-20C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**6.7**
BDC-MW-20C	MW-20C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**3.4**
BDC-MW-20C	MW-20C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**3.3**
BDC-MW-20C	MW-20C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**3.4**
BDC-MW-20C	MW-20C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20C	MW-20C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20C	MW-20C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.6**
BDC-MW-20C	MW-20C-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	**1.8**
BDC-MW-20C	MW-20C-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20C	MW-20C-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.9**
BDC-MW-20C	MW-20C-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20C	MW-20C-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**1.06**
BDC-MW-20C	MW-20C-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.81 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20C	MW-20C-011216	N	12/16/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-20C	MW-20C-020605	N	6/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**1.4**
BDC-MW-20C	MW-20C-021203	N	12/3/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**2.7**
BDC-MW-20C	MW-20C-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**4**
BDC-MW-20C	MW-20C-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.1**
BDC-MW-20C	MW-20C-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.4**
BDC-MW-20C	MW-20C-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**4.6**
BDC-MW-20C	MW-20C-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.3**
BDC-MW-20C	MW-20C-051115	N	11/15/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.9**
BDC-MW-20C	MW-20C-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.6**
BDC-MW-20C	MW-20C-061129	N	11/29/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**0.8**	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	**0.2**	0.2 U	0.2 U	--	0.2 U	**1.5**
BDC-MW-20C	MW-20C-070521	N	5/21/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**1.8**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-20C	DC-MW20C-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-20C	MW-20C-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-101108	N	11/8/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-20C	MW-20C-111103	N	11/3/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-20C	MW-20C-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-20C	MW-20C-121113	N	11/13/2012	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-20C	MW-20C-130521	N	5/21/2013	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-20C	MW-20C-131112	N	11/12/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-20C	MW-20C-140507	N	5/7/2014	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-20C	MW-20C-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-20C	MW-20C-150428	N	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-20C	MW-20C-DUP-150428	FD	4/28/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-20C	MW-20C-151027	N	10/27/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 UJ	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-20C	MW-20C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20C	MW-20C-161102	N	11/2/2016	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5 UJ	--	--	0.5 UJ	5 UJ
BDC-MW-20C	MW-20C-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-20C	MW-20C-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-20C	MW-20C-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-20C	MW-20C-181105	N	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 UJ	--	--	0.20 U	5.00 U
BDC-MW-20C	MW-20C-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-20C	MW-20C-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-20D	MW-20D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-20C	DC-MW20C-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.6**	1.0 U	--	1.0 U	1.0 U
BDC-MW-20C	MW-20C-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-091118	N	11/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	**1.7**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-101108	N	11/8/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-111103	N	11/3/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-20C	MW-20C-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.4**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**1.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-20C	MW-20C-121113	N	11/13/2012	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-20C	MW-20C-130521	N	5/21/2013	5 U	5 U	50 U	50 U	250 UJ	50 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-20C	MW-20C-131112	N	11/12/2013	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-20C	MW-20C-140507	N	5/7/2014	5 U	5 U	50 U	50 U	250 UJ	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-20C	MW-20C-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.2**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.9**	0.2 U	--	0.5 U	0.5 U
BDC-MW-20C	MW-20C-150428	N	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.2**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.7**	0.2 U	--	0.5 U	0.5 U
BDC-MW-20C	MW-20C-DUP-150428	FD	4/28/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.2**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.8**	0.2 U	--	0.5 U	0.5 U
BDC-MW-20C	MW-20C-151027	N	10/27/2015	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**1**	0.2 U	--	0.5 U	0.5 U
BDC-MW-20C	MW-20C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.2**	--	--	--	--
BDC-MW-20C	MW-20C-161102	N	11/2/2016	0.5 UJ	0.5 UJ	5 UJ	**37 J**	25 UJ	5 UJ	**0.3 J**	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**0.6 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-20C	MW-20C-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**1.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-20C	MW-20C-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**1.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-20C	MW-20C-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**1.09**	0.20 U	--	0.20 U	0.20 U
BDC-MW-20C	MW-20C-181105	N	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	**1.02**	0.20 U	--	0.20 U	0.20 U
BDC-MW-20C	MW-20C-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**1.14**	0.20 U	--	0.20 U	0.20 U
BDC-MW-20C	MW-20C-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**1.15**	0.20 U	--	0.20 U	0.20 U
BDC-MW-20D	MW-20D-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-20D	MW-20D-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-20D	MW-20D-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**1.8**	--	--	--	--
BDC-MW-20D	MW-20D-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2.22**	--	--	--	--
BDC-MW-20D	MW-20D-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-20D	MW-20D-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-20D	MW-20D-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**46.38**	--	--	--	--
BDC-MW-20D	MW-20D-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20D	MW-20D-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20D	MW-20D-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-20C	DC-MW20C-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**1.3**
BDC-MW-20C	MW-20C-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.5**
BDC-MW-20C	MW-20C-081123	N	11/23/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.7**
BDC-MW-20C	MW-20C-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2**
BDC-MW-20C	MW-20C-091118	N	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.3**
BDC-MW-20C	MW-20C-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	**1.8**
BDC-MW-20C	MW-20C-101108	N	11/8/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.4**
BDC-MW-20C	MW-20C-110504	N	5/4/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.8**
BDC-MW-20C	MW-20C-111103	N	11/3/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.1**
BDC-MW-20C	MW-20C-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.5**
BDC-MW-20C	MW-20C-121113	N	11/13/2012	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-20C	MW-20C-130521	N	5/21/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	50 UJ	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-20C	MW-20C-131112	N	11/12/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-20C	MW-20C-140507	N	5/7/2014	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 UJ	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-20C	MW-20C-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.7**
BDC-MW-20C	MW-20C-150428	N	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1**
BDC-MW-20C	MW-20C-DUP-150428	FD	4/28/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1**
BDC-MW-20C	MW-20C-151027	N	10/27/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.9**
BDC-MW-20C	MW-20C-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	**0.2**	--	--	--	--	**0.3**
BDC-MW-20C	MW-20C-161102	N	11/2/2016	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**240 J**	--	0.2 UJ	0.2 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	**0.5 J**
BDC-MW-20C	MW-20C-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**1.4**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.4**
BDC-MW-20C	MW-20C-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**1.6**	--	0.2 U	0.2 U	5.0 U	0.2 U	0.5 U	--	--	0.5 U	**0.5**
BDC-MW-20C	MW-20C-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.33**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-20C	MW-20C-181105	N	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**3.41**	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.32**	--	0.20 U	0.20 U	1.00 UJ	0.20 U	0.20 U	--	--	0.20 UJ	**0.25**
BDC-MW-20C	MW-20C-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.28**
BDC-MW-20C	MW-20C-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.22**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.42**
BDC-MW-20D	MW-20D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-20D	MW-20D-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-20D	MW-20D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.3**	--	--	--	--	--	**1.5**	--	--	--	--	1 U
BDC-MW-20D	MW-20D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**6.98**
BDC-MW-20D	MW-20D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-20D	MW-20D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-20D	MW-20D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**31.12**
BDC-MW-20D	MW-20D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20D	MW-20D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20D	MW-20D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-20D	MW-20D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-20D	MW-20D-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-20D	MW-20D-990615	N	6/15/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-991118	N	11/18/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-001204	N	12/4/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-060515	N	5/15/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-050321	N	3/21/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**5.5**	5 U	--	1 U	1 U	--	1 U	**2**	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**4.3**	5 U	--	1 U	1 U	--	1 U	**1.2**	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-051116	N	11/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**2.3**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-060222	N	2/22/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**4.7**	5 U	--	1 U	1 U	--	1 U	**1.4**	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**2.1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-060815	N	8/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**2.3**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-061130	N	11/30/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**1.8**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-22A	DC-MW22A-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	**2.2**	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-22A	MW-22A-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.5**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	DC-MW22A-071203	N	12/3/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-22A	MW-22A-080520	N	5/20/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-081123	N	11/23/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**3.1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-100524	N	5/24/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**2.4**	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-101111	N	11/11/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.1**	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-22A	MW-22A-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**6.1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-22A	MW-22A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**4.1**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-22A	MW-22A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-20D	MW-20D-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20D	MW-20D-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20D	MW-20D-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20D	MW-20D-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-20D	MW-20D-981019	N	10/19/1998	1 U	1 U	1 U	**2.9**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-990615	N	6/15/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-991118	N	11/18/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-001204	N	12/4/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-20D	MW-20D-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-21A	MW-21A-060515	N	5/15/2006	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-21A	DC-MW21A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-21A	DC-MW21A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-21A	DC-MW21A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-21A	DC-MW21A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-22A	MW-22A-050321	N	3/21/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.5**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-050822	N	8/22/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-051116	N	11/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-060222	N	2/22/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.4**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-060815	N	8/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-061130	N	11/30/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-22A	DC-MW22A-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.5**	1.0 U	--	1.0 U	1.0 U
BDC-MW-22A	MW-22A-070523	N	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.5**	1 U	--	1 U	1 U
BDC-MW-22A	DC-MW22A-071203	N	12/3/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**2.0**	1.0 U	--	1.0 U	1.0 U
BDC-MW-22A	MW-22A-080520	N	5/20/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.6**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-081123	N	11/23/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.5**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-091118	N	11/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	**2.1**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-100524	N	5/24/2010	1 U	1 U	5 U	10 UJ	10 UJ	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-101111	N	11/11/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-22A	MW-22A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**0.9**	0.2 U	--	0.2 U	0.2 U
BDC-MW-22A	MW-22A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-20D	MW-20D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20D	MW-20D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20D	MW-20D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20D	MW-20D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-20D	MW-20D-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-20D	MW-20D-990615	N	6/15/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20D	MW-20D-991118	N	11/18/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20D	MW-20D-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1.01 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20D	MW-20D-001204	N	12/4/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-20D	MW-20D-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-21A	MW-21A-060515	N	5/15/2006	--	1 U	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U	2 U	--	--	--	--	--	--	--	--	--
BDC-MW-21A	MW-21A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-21A	DC-MW21A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-050321	N	3/21/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**9.9**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2**
BDC-MW-22A	MW-22A-050512	N	5/12/2005	--	**1.8**	1 U	5 U	1 U	**3.8**	1 U	2 U	**140**	1 U	1 U	**3.7**	1 U	1 U	1 U	1 U	**1.5**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.9**
BDC-MW-22A	MW-22A-050822	N	8/22/2005	--	**1.8**	1 U	5 U	1 U	**2.6**	1 U	2 U	**180**	1 U	1 U	**3.1**	1 U	1 U	1 U	1 U	**1.3**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.2**
BDC-MW-22A	MW-22A-051116	N	11/16/2005	--	**1.4**	1 U	5 U	1 U	**1.8**	1 U	2 U	**170**	1 U	1 U	**2.2**	1 U	1 U	1 U	1 U	**1.2**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**
BDC-MW-22A	MW-22A-060222	N	2/22/2006	--	**2**	1 U	5 U	1 U	**3.4**	1 U	2 U	**210**	1 U	1 U	**3.3**	1 U	1 U	1 U	1 U	**1.3**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.3**
BDC-MW-22A	MW-22A-060517	N	5/17/2006	--	**1**	1 U	5 U	1 U	**1.5**	1 U	2 U	**120**	1 U	1 U	**1.6**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.7**
BDC-MW-22A	MW-22A-060815	N	8/15/2006	--	**1.8**	1 U	5 U	1 U	**2.2**	1 U	2 U	**200**	1 U	1 U	**2.2**	1 U	1 U	1 U	1 U	**1.3**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.4**
BDC-MW-22A	MW-22A-061130	N	11/30/2006	--	**1.8**	0.2 U	0.5 U	**0.3**	**3.4**	0.2 U	0.3 U	**140**	0.2 U	0.2 U	**3.6**	0.2 U	**0.3**	0.2 U	0.2 U	**1.4**	--	**0.2**	0.2 U	1 U	**0.3**	0.2 U	0.2 U	--	0.2 U	**2.4**
BDC-MW-22A	DC-MW22A-070222	N	2/22/2007	--	**1.2**	1.0 U	5.0 U	1.0 U	**1.7**	1.0 U	2.0 U	**110**	1.0 U	1.0 U	**1.9**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**2.3**
BDC-MW-22A	MW-22A-070523	N	5/23/2007	--	**1.2**	1 U	5 U	1 U	**1.1**	1 U	2 U	**100**	1 U	1 U	**1.6**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.7**
BDC-MW-22A	DC-MW22A-071203	N	12/3/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	**25**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**1.3**
BDC-MW-22A	MW-22A-080520	N	5/20/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**41**	1 U	1 U	**1.1**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.9**
BDC-MW-22A	MW-22A-081123	N	11/23/2008	--	**1.6**	1 U	5 U	1 U	2 U	1 U	2 U	**32**	1 U	1 U	**2.5**	1 U	1 U	1 U	1 U	**1.1**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.1**
BDC-MW-22A	MW-22A-090519	N	5/19/2009	--	**1.8**	1 U	5 U	1 U	2 U	1 U	2 U	**51**	1 U	1 U	**2.8**	1 U	1 U	1 U	1 U	**1**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.5**
BDC-MW-22A	MW-22A-091118	N	11/18/2009	--	**1.4**	1 U	5 U	1 U	2 U	1 U	2 U	**15**	1 U	1 U	**2.2**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.8**
BDC-MW-22A	MW-22A-100524	N	5/24/2010	--	**1.1**	1 U	5 U	1 U	2 U	1 U	2 U	**14**	1 U	1 U	**1.9**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	**1.7**
BDC-MW-22A	MW-22A-101111	N	11/11/2010	--	**2.3**	1 U	5 U	1 U	2 U	1 U	2 U	**16**	1 U	1 U	**3.6**	1 U	1 U	1 U	1 U	**1.2**	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	**2.7**
BDC-MW-22A	MW-22A-110504	N	5/4/2011	--	**2**	1 U	5 U	1 U	2 U	1 U	2 U	**20**	1 U	1 U	**3.2**	1 U	1 U	1 U	1 U	**1**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**
BDC-MW-22A	MW-22A-111113	N	11/13/2011	--	**1.5**	0.2 U	0.5 U	**0.3**	**1.1**	1 U	0.5 U	**12**	0.2 U	0.2 U	**2.2**	0.2 U	0.2 U	0.2 U	0.2 U	**0.7**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**1.7**
BDC-MW-22A	MW-22A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-22A	MW-22A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**8.1**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	DC-MW22A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**4.8**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	DC-MW22A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	DC-MW22A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-130520	N	5/20/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**6.3**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	DC-MW22A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**1.8**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	MW-22A-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**2.3**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	MW-22A-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**0.8**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	MW-22A-150429	N	4/29/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	**4.1**	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	MW-22A-151027	N	10/27/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 UJ	**0.6**	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-22A	MW-22A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-161102	N	11/2/2016	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	**2.1 J**	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**7.1 J**	--	--	0.5 UJ	5 UJ
BDC-MW-22A	MW-22A-170502	N	5/2/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	**4.3 J**	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	**0.8 J**	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5 UJ	--	--	0.5 UJ	5 UJ
BDC-MW-22A	MW-22A-171108	N	11/8/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1.0 UJ	0.5 UJ	**7.8 J**	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	**1.9 J**	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5.0 UJ	--	--	0.5 UJ	5.0 UJ
BDC-MW-22A	MW-22A-180501	N	5/1/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	**6.62**	5.00 UJ	--	2.00 U	2.00 U	--	2.00 U	**2.09**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-22A	MW-22A-181105	N	11/5/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 UJ	5.00 U	5.00 U	**8.20**	5.00 UJ	--	2.00 U	2.00 UJ	--	2.00 U	**2.61**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-22A	MW-22A-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	**10.1**	0.50 U	--	0.20 U	0.20 U	--	0.20 U	**3.08**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-22A	MW-22A-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	**9.02**	0.50 U	--	0.20 U	0.20 U	--	0.20 U	**2.35**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-23A	MW-23A-050321	N	3/21/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**3**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.9**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-DUP-050822	FD	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**2.1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-051116	N	11/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-060222	N	2/22/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1.1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-060517	N	5/17/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-060815	N	8/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-061130	N	11/30/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.4**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-23A	DC-MW23A-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-23A	MW-23A-070523	N	5/23/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-071130	N	11/30/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.7**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-23A	MW-23A-080521	N	5/21/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-081125	N	11/25/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-090519	N	5/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	**1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-23A	MW-23A-091118	N	11/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U

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Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-22A	MW-22A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.4**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	DC-MW22A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-22A	MW-22A-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.4**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	DC-MW22A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-22A	DC-MW22A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-22A	MW-22A-130520	N	5/20/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	**0.5**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	DC-MW22A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-22A	MW-22A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.3**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	MW-22A-140507	N	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	**0.4**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	MW-22A-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.5**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	MW-22A-150429	N	4/29/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	**0.3**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	MW-22A-151027	N	10/27/2015	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	**0.3**	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-22A	MW-22A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.5**	--	--	--	--
BDC-MW-22A	MW-22A-161102	N	11/2/2016	0.5 UJ	0.5 UJ	5 UJ	**8 J**	25 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	**1.4 J**	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**0.5 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-22A	MW-22A-170502	N	5/2/2017	0.5 UJ	0.5 UJ	5 UJ	**5.3 J**	25 UJ	5 UJ	**0.3 J**	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**0.4 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-22A	MW-22A-171108	N	11/8/2017	0.5 UJ	0.5 UJ	5.0 UJ	5.0 UJ	25 UJ	5.0 UJ	**0.5 J**	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	**0.7 J**	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**0.6 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-22A	MW-22A-180501	N	5/1/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-22A	MW-22A-181105	N	11/5/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-22A	MW-22A-190501	N	5/1/2019	0.20 U	**0.23**	5.00 U	5.00 U	5.00 U	1.00 U	**0.51**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.52**	0.20 U	--	0.20 U	0.20 U
BDC-MW-22A	MW-22A-191104	N	11/4/2019	0.20 U	**0.21**	5.00 U	5.00 U	5.00 U	1.00 U	**0.49**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	**0.49**	0.20 U	--	0.20 U	0.20 U
BDC-MW-23A	MW-23A-050321	N	3/21/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-050822	N	8/22/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-DUP-050822	FD	8/22/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-051116	N	11/16/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-060222	N	2/22/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-060517	N	5/17/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-060815	N	8/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-061130	N	11/30/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-23A	DC-MW23A-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-23A	MW-23A-070523	N	5/23/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-071130	N	11/30/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-23A	MW-23A-080521	N	5/21/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-081125	N	11/25/2008	1 U	1 U	5 U	**8**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-090519	N	5/19/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-23A	MW-23A-091118	N	11/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-22A	MW-22A-120514	N	5/14/2012	--	**2.5**	0.5 U	0.5 U	0.5 U	**1.4**	0.5 U	0.5 U	**15**	0.5 U	0.5 U	**4**	0.5 U	0.5 U	0.5 U	0.2 U	**1.3**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2**
BDC-MW-22A	DC-MW22A-120904	N	9/4/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-121114	N	11/14/2012	--	**2.3**	0.5 U	0.5 U	0.5 U	**1.5**	0.5 U	0.5 U	**9.2**	0.5 U	0.5 U	**3.7**	0.5 U	0.5 U	0.5 U	0.2 U	**1.2**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.8**
BDC-MW-22A	DC-MW22A-121211	N	12/11/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	DC-MW22A-130220	N	2/20/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-130520	N	5/20/2013	--	**2.6**	0.5 U	0.5 U	**0.5**	**1.6**	0.5 U	0.5 U	**11**	0.5 U	0.5 U	**4.2**	0.5 U	0.5 U	0.5 U	0.2 U	**1.4**	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**2**
BDC-MW-22A	DC-MW22A-130530	N	5/30/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-22A	MW-22A-131112	N	11/12/2013	--	**1.9**	0.5 U	0.5 U	0.5 U	**1**	0.5 U	0.5 U	**7.1**	0.5 U	0.5 U	**2.8**	0.5 U	0.5 U	0.5 U	0.2 U	**0.9**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.7**
BDC-MW-22A	MW-22A-140507	N	5/7/2014	--	**2.5**	0.5 U	0.5 U	0.5 U	**1.3**	0.5 U	0.5 U	**9.8**	0.5 U	0.5 U	**3.6**	0.5 U	0.5 U	0.5 U	0.2 U	**1.2**	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.6**
BDC-MW-22A	MW-22A-141105	N	11/5/2014	--	**3.2**	0.5 U	0.5 U	**0.5**	**1.4**	0.5 U	0.5 U	**6.5**	0.5 U	0.5 U	**4.5**	0.5 U	0.5 U	0.5 U	0.2 U	**1.2**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.5**
BDC-MW-22A	MW-22A-150429	N	4/29/2015	--	**2**	0.5 U	0.5 U	0.5 U	**0.9**	0.5 U	0.5 U	**6.2**	0.5 U	0.5 U	**2.9**	0.5 U	0.5 U	0.5 U	0.2 U	**0.7**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.5**
BDC-MW-22A	MW-22A-151027	N	10/27/2015	--	**1.8**	0.5 U	0.5 U	0.5 U	**0.8**	0.5 U	0.5 U	**4.7 J**	0.5 U	0.5 U	**2.7**	0.5 U	0.5 U	0.5 U	0.2 U	**0.5**	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.5**
BDC-MW-22A	MW-22A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	0.2 U
BDC-MW-22A	MW-22A-161102	N	11/2/2016	--	**1.5 J**	0.5 UJ	0.5 UJ	0.5 UJ	**1.1 J**	0.5 UJ	0.5 UJ	**110 J**	0.5 UJ	0.5 UJ	**1.4 J**	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**1.2 J**	--	0.2 UJ	0.2 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ
BDC-MW-22A	MW-22A-170502	N	5/2/2017	--	**3 J**	0.5 UJ	0.5 UJ	0.5 UJ	**2.5 J**	0.5 UJ	0.5 UJ	**200 J**	0.5 UJ	0.5 UJ	**3.1 J**	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**2.9 J**	--	0.2 UJ	0.2 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	**0.3 J**
BDC-MW-22A	MW-22A-171108	N	11/8/2017	--	**4.6 J**	0.5 UJ	0.5 UJ	0.5 UJ	**4.7 J**	0.5 UJ	0.5 UJ	**220 J**	0.5 UJ	0.5 UJ	**5.0 J**	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**8.0 J**	--	0.2 UJ	0.2 UJ	5.0 UJ	0.2 UJ	0.5 UJ	--	--	0.5 UJ	**0.3 J**
BDC-MW-22A	MW-22A-180501	N	5/1/2018	--	**3.74**	2.00 U	5.00 U	2.00 U	**4.59**	10.0 U	10.0 U	**608**	2.00 U	2.00 U	**3.85**	2.00 U	2.00 U	2.00 U	2.00 U	**2.08**	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-22A	MW-22A-181105	N	11/5/2018	--	**3.93**	2.00 U	5.00 U	2.00 U	**4.21**	10.0 U	10.0 U	**302**	2.00 U	2.00 U	**4.09**	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-22A	MW-22A-190501	N	5/1/2019	--	**4.62**	0.20 U	0.50 U	**0.50**	**5.26**	1.00 U	1.00 U	**783**	0.20 U	0.20 U	**5.19**	0.20 U	0.20 U	0.20 U	0.20 U	**2.11**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-22A	MW-22A-191104	N	11/4/2019	--	**3.69**	0.20 U	0.50 U	**0.42**	**4.04**	1.00 U	1.00 U	**738 J**	0.20 U	0.20 U	**4.44**	0.20 U	0.20 U	0.20 U	0.20 U	**1.68**	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**0.21**
BDC-MW-23A	MW-23A-050321	N	3/21/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**19**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	**1.8**	1 U	2 U	**130**	1 U	1 U	**3.6**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	**1.2**	1 U	2 U	**100**	1 U	1 U	**2.7**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-DUP-050822	FD	8/22/2005	--	1 U	1 U	5 U	1 U	**1.3**	1 U	2 U	**110**	1 U	1 U	**3**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-051116	N	11/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-060222	N	2/22/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**45**	1 U	1 U	**1.6**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-060517	N	5/17/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**69**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-060815	N	8/15/2006	--	1 U	1 U	5 U	1 U	**1.1**	1 U	2 U	**140**	1 U	1 U	**1.6**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-061130	N	11/30/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	**0.4**	0.2 U	0.3 U	**9**	0.2 U	0.2 U	**1.8**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-23A	DC-MW23A-070222	N	2/22/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	**26**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-23A	MW-23A-070523	N	5/23/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**36**	1 U	1 U	**1.5**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-071130	N	11/30/2007	--	**0.2**	0.2 U	0.5 U	**0.2**	**0.7**	0.2 U	0.3 U	**6.1**	0.2 U	0.2 U	**2.1**	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-23A	MW-23A-080521	N	5/21/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**5.3**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-081125	N	11/25/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	**2**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-090519	N	5/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**9.8**	1 U	1 U	**2.8**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-23A	MW-23A-091118	N	11/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-23A	MW-23A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6A	6A1-980801	N	8/1/1989	--	--	--	--	--	**0.3 J**	**2.7 J**	--	--	--	--	--	--	--	--	--	--	**340**	--	--	--	--	--	--	--	--	--	--
BDC-MW-6A	MW-06A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**760**	--	--	--	--	--	--	--	--	--	--
BDC-MW-6A	MW-06A-040615	N	6/15/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-040823	N	8/23/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**21**	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-041019	N	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**12**	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-DUP-041019	FD	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**11**	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-050222	N	2/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**100**	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-050516	N	5/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**16**	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-DUP-051114	FD	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-060222	N	2/22/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-060518	N	5/18/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-DUP-060518	FD	5/18/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-061129	N	11/29/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-6A	DC-MW6A-070223	N	2/23/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-6A	MW-06A-070524	N	5/24/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-071130	N	11/30/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-6A	MW-06A-080521	N	5/21/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-DUP-080521	FD	5/21/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-081125	N	11/25/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**90**	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-DUP-081125	FD	11/25/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**98**	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-090520	N	5/20/2009	4 U	4 U	4 U	4 U	--	4 U	4 U	4 U	20 U	8 U	20 U	4 U	20 U	--	4 U	4 U	--	4 U	4 U	4 U	20 U	4 U	4 U	20 U	20 U	--	4 U	20 U
BDC-MW-6A	MW-06A-091119	N	11/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-100524	N	5/24/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-101110	N	11/11/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6A	MW-06A-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-6A	MW-06A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-6A	MW-06A-120515	N	5/15/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6A	MW-06A-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6A	MW-06A-130521	N	5/21/2013	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6A	MW-06A-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6A	MW-06A-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6A	MW-06A-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-23A	MW-23A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.0 U	--	--
BDC-MW-6A	6A1-980801	N	8/1/1989	--	--	--	--	--	--	**0.6 J**	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6A	MW-06A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6A	MW-06A-040615	N	6/15/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**23**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-040823	N	8/23/2004	1 U	1 U	5 U	46 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**45**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-041019	N	10/19/2004	1 U	1 U	5 U	**54**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.6**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-DUP-041019	FD	10/19/2004	1 U	1 U	5 U	**53**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.5**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-050222	N	2/22/2005	1 U	1 U	5 U	**1500**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.3**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-050516	N	5/16/2005	1 U	1 U	5 U	**310**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.6**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-050822	N	8/22/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-DUP-051114	FD	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-060222	N	2/22/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-060518	N	5/18/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-DUP-060518	FD	5/18/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-060816	N	8/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-061129	N	11/29/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	0.2 U	--	0.2 U	0.2 U
BDC-MW-6A	DC-MW6A-070223	N	2/23/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-6A	MW-06A-070524	N	5/24/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-071130	N	11/30/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-6A	MW-06A-080521	N	5/21/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-DUP-080521	FD	5/21/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-081125	N	11/25/2008	1 U	1 U	**10**	**1900**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-DUP-081125	FD	11/25/2008	1 U	1 U	**11**	**1800**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-090520	N	5/20/2009	4 U	4 U	20 U	40 U	40 U	20 U	4 U	4 U	4 U	4 U	8 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	--	4 U	4 U
BDC-MW-6A	MW-06A-091119	N	11/19/2009	1 U	1 U	5 U	10 U	10 UJ	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-100524	N	5/24/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-101110	N	11/11/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6A	MW-06A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-6A	MW-06A-120515	N	5/15/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-06A-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-06A-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-06A-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-06A-140507	N	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-06A-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.4**	0.2 U	--	0.5 U	0.5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-23A	MW-23A-120323	N	3/23/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6A	6A1-980801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**790**	ND	ND	--	--	--	**290**	--	--	--	--	**54**
BDC-MW-6A	MW-06A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**690**	--	--	--	--	--	**310**	--	--	--	--	ND
BDC-MW-6A	MW-06A-040615	N	6/15/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	**2.4**	1 U	1 U	1 U	--	1 U	1 U	5 U	**1**	1 U	2 U	--	5 U	**4**
BDC-MW-6A	MW-06A-040823	N	8/23/2004	--	**8**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**1.3**	1 U	5 U	1 U	1 U	2 U	--	5 U	**5.9**
BDC-MW-6A	MW-06A-041019	N	10/19/2004	--	**6.3**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**31**
BDC-MW-6A	MW-06A-DUP-041019	FD	10/19/2004	--	**5.7**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**28**
BDC-MW-6A	MW-06A-050222	N	2/22/2005	--	**5**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6A	MW-06A-050516	N	5/16/2005	--	**5.6**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6A	MW-06A-050822	N	8/22/2005	--	**5.2**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**30**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6A	MW-06A-051114	N	11/14/2005	--	**3.9**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**31**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.2**
BDC-MW-6A	MW-06A-DUP-051114	FD	11/14/2005	--	**4**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**32**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.1**
BDC-MW-6A	MW-06A-060222	N	2/22/2006	--	**2.1**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.4**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**4.8**
BDC-MW-6A	MW-06A-060518	N	5/18/2006	--	**1.7**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.6**
BDC-MW-6A	MW-06A-DUP-060518	FD	5/18/2006	--	**1.7**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.7**
BDC-MW-6A	MW-06A-060816	N	8/16/2006	--	**1.8**	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.5**
BDC-MW-6A	MW-06A-061129	N	11/29/2006	--	**1.6**	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.1**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**2.1**
BDC-MW-6A	DC-MW6A-070223	N	2/23/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**6.7**
BDC-MW-6A	MW-06A-070524	N	5/24/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.9**
BDC-MW-6A	MW-06A-071130	N	11/30/2007	--	**0.3**	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**1.2**
BDC-MW-6A	MW-06A-080521	N	5/21/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.4**
BDC-MW-6A	MW-06A-DUP-080521	FD	5/21/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.3**
BDC-MW-6A	MW-06A-081125	N	11/25/2008	--	**2.4**	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6A	MW-06A-DUP-081125	FD	11/25/2008	--	**2.3**	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6A	MW-06A-090520	N	5/20/2009	--	4 U	4 U	20 U	4 U	8 U	4 U	8 U	20 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	--	4 U	4 U	20 U	4 U	4 U	8 U	--	20 U	4 U
BDC-MW-6A	MW-06A-091119	N	11/19/2009	--	**1.2**	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6A	MW-06A-100524	N	5/24/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	**1.9**
BDC-MW-6A	MW-06A-101110	N	11/11/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	**1.7**
BDC-MW-6A	MW-06A-110504	N	5/4/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.4**
BDC-MW-6A	MW-06A-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**0.8**
BDC-MW-6A	MW-06A-120515	N	5/15/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.2**
BDC-MW-6A	MW-06A-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.8**
BDC-MW-6A	MW-06A-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	5 UJ	0.5 U	0.5 U	0.5 U	--	0.5 U	**1.3**
BDC-MW-6A	MW-06A-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.4**
BDC-MW-6A	MW-06A-140507	N	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.5**
BDC-MW-6A	MW-06A-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.7**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6A	MW-06A-150429	N	4/29/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6A	MW-06A-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6A	MW-06A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6A	MW-6A-161101	N	11/1/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-6A	MW-6A-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-6A	MW-6A-171108	N	11/8/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1.0 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5.0 UJ	--	--	0.5 UJ	5.0 UJ
BDC-MW-6A	MW-6A-180501	N	5/1/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 UJ	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-6A	MW-6A-181106	N	11/6/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.50 U	0.50 U	0.50 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-6A	MW-6A-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-6A	MW-6A-191106	N	11/6/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-6B	6B1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**23**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**710**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**25**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-951027	N	10/27/1995	--	5 U	5 U	5 U	--	5 U	5 U	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	5 U	--	5 U	--	20 U	10 U	--	--	5 U
BDC-MW-6B	MW-06B-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-981022	N	10/22/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-6B	MW-06B-990616	N	6/16/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-991122	N	11/22/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-001201	N	12/1/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-6A	MW-06A-150429	N	4/29/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.6**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-06A-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	**0.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-06A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1**	--	--	--	--
BDC-MW-6A	MW-6A-161101	N	11/1/2016	0.5 U	0.5 U	5 UJ	**5.3 J**	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	**0.5**	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-6A-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.3**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6A	MW-6A-171108	N	11/8/2017	0.5 UJ	0.5 UJ	5.0 UJ	5.0 UJ	25 UJ	5.0 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**0.3 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-6A	MW-6A-180501	N	5/1/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-6A	MW-6A-181106	N	11/6/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-6A	MW-6A-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-6A	MW-6A-191106	N	11/6/2019	0.20 U	0.20 U	5.00 U	**5.15**	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-6B	6B1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**0.9 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-06B-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**710**	--	--	--	--
BDC-MW-6B	MW-06B-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**25**	--	--	--	--
BDC-MW-6B	MW-06B-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**23**	--	--	--	--
BDC-MW-6B	MW-06B-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**43.71**	--	--	--	--
BDC-MW-6B	MW-06B-951027	N	10/27/1995	--	--	5 U	5 U	--	--	5 U	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**53.75**	5 U	--	5 U	--
BDC-MW-6B	MW-06B-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**29.45**	--	--	--	--
BDC-MW-6B	MW-06B-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**58.31**	--	--	--	--
BDC-MW-6B	MW-06B-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**46.3**	--	--	--	--
BDC-MW-6B	MW-06B-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**30.5**	--	--	--	--
BDC-MW-6B	MW-06B-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**37.4**	--	--	--	--
BDC-MW-6B	MW-06B-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**60.9**	--	--	--	--
BDC-MW-6B	MW-06B-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**61.8**	--	--	--	--
BDC-MW-6B	MW-06B-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**76.4**	--	--	--	--
BDC-MW-6B	MW-06B-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**66.7**	--	--	--	--
BDC-MW-6B	MW-06B-981022	N	10/22/1998	1 U	1 U	1 U	**5.4**	5 U	5 U	**1.3**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.9**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-990616	N	6/16/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**70.1**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-991122	N	11/22/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**49.7**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**71.5**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-001201	N	12/1/2000	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**91.77**	--	--	--	--
BDC-MW-6B	MW-06B-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**63.94**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-011205	N	12/5/2001	1 U	1 U	1 U	**4.7**	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**27**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**40**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**23**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6A	MW-06A-150429	N	4/29/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**3.3**
BDC-MW-6A	MW-06A-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.5**
BDC-MW-6A	MW-06A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-MW-6A	MW-6A-161101	N	11/1/2016	--	**1.9**	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**2.5**	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**0.7**
BDC-MW-6A	MW-6A-170502	N	5/2/2017	--	**2.3**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.6**	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 UJ	**0.4 J**
BDC-MW-6A	MW-6A-171108	N	11/8/2017	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**0.4 J**	--	0.2 UJ	0.2 UJ	5.0 UJ	0.2 UJ	0.5 UJ	--	--	0.5 UJ	**0.3 J**
BDC-MW-6A	MW-6A-180501	N	5/1/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-6A	MW-6A-181106	N	11/6/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-6A	MW-6A-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-6A	MW-6A-191106	N	11/6/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 UJ	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-6B	6B1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**93**	ND	**0.3 J**	--	--	--	**28**	--	--	--	--	**4.7 J**
BDC-MW-6B	MW-06B-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2000**	--	--	--	--	--	**810**	--	--	--	--	ND
BDC-MW-6B	MW-06B-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**48**	--	--	--	--	--	**10**	--	--	--	--	**74**
BDC-MW-6B	MW-06B-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**27**	--	--	--	--	--	**4.2**	--	--	--	--	**13**
BDC-MW-6B	MW-06B-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5.87**	--	--	--	--	--	**3.57**	--	--	--	--	**36.53**
BDC-MW-6B	MW-06B-951027	N	10/27/1995	--	5 U	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	**14.4**	5 U	10 U	5 U	5 U	--	**6 J**	--	--	--	--	**31.8**
BDC-MW-6B	MW-06B-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**9.62 J**	--	--	--	--	--	5 U	--	--	--	--	**52.29**
BDC-MW-6B	MW-06B-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**26.18**	--	--	--	--	--	**7.37**	--	--	--	--	**44.78**
BDC-MW-6B	MW-06B-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**2.8**	--	--	--	--	--	--	**13.7**	--	--	--	--	--	**3.5**	--	--	--	--	**54.5**
BDC-MW-6B	MW-06B-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**14.3**	--	--	--	--	--	**2.5**	--	--	--	--	**49.4**
BDC-MW-6B	MW-06B-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**21.5**	--	--	--	--	--	**4.9**	--	--	--	--	**63.7**
BDC-MW-6B	MW-06B-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**21.3**	--	--	--	--	--	**4.7**	--	--	--	--	**88.7**
BDC-MW-6B	MW-06B-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**17**	--	--	--	--	--	**4.6**	--	--	--	--	**55**
BDC-MW-6B	MW-06B-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**16.9**	--	--	--	--	--	**6.5**	--	--	--	--	**62.7**
BDC-MW-6B	MW-06B-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**18.9**	--	--	--	--	--	**3.5**	--	--	--	--	**46.3**
BDC-MW-6B	MW-06B-981022	N	10/22/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.4**	1 U	1 U	--	1 U	1 U	1 U	**16.3**	1 U	2 U	1 U	1 U	--	**2.6**	1 U	--	--	--	**4.2**
BDC-MW-6B	MW-06B-990616	N	6/16/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**22.6**	1 U	1 U	1 U	1 U	--	**4.54**	1.46 U	--	--	--	**48.4**
BDC-MW-6B	MW-06B-991122	N	11/22/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**2.3**	1 U	1 U	1 U	1 U	--	**2.2**	1.46 U	--	--	--	**25.9**
BDC-MW-6B	MW-06B-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**6**	1 U	1 U	**1.2**	1 U	--	**4.7**	1.46 U	--	--	--	**8**
BDC-MW-6B	MW-06B-001201	N	12/1/2000	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**10.19**	--	--	--	--	--	**8.71**	--	--	--	--	**21.58**
BDC-MW-6B	MW-06B-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**4.5 J**	1 U	1 U	--	1 U	1 U	1 U	**2.6 J**	1 U	1 U	1 U	1 U	--	**5.83 J**	1.46 U	--	--	--	**10.62**
BDC-MW-6B	MW-06B-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.8**	1 U	1 U	--	1 U	1 U	1 U	**2.4**	1 U	1 U	1 U	1 U	--	**4.7**	1.5 U	--	--	--	**8.9**
BDC-MW-6B	MW-06B-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U	5 U	**5.9**	1 U	2.0 U	--	5 U	**12**
BDC-MW-6B	MW-06B-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U	5 U	**4.5**	1 U	2.0 U	--	5 U	**11**
BDC-MW-6B	MW-06B-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.9**	1 U	--	1 U	1 U	5 U	**2.9**	1 U	2 U	--	5 U	**8.4**
BDC-MW-6B	MW-06B-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.9**	1 U	--	1 U	1 U	5 U	**1**	1 U	2 U	--	5 U	**17**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6B	MW-06B-DUP-031117	FD	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-040504	N	5/4/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-040823	N	8/23/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-041019	N	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-050222	N	2/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**140**	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-050516	N	5/16/2005	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	10 U	4 U	10 U	2 U	10 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	**100**	10 U	--	2 U	10 U
BDC-MW-6B	MW-06B-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**9.6**	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-060222	N	2/22/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-060518	N	5/18/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-061129	N	11/29/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-6B	DC-MW6B-070223	N	2/23/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-6B	MW-06B-070524	N	5/24/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-071130	N	11/30/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-6B	MW-06B-080521	N	5/21/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-081125	N	11/25/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-090520	N	5/20/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	**6.6**	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-091119	N	11/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-100524	N	5/24/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-101111	N	11/11/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 UJ	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6B	MW-06B-110504	N	5/4/2011	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-6B	MW-06B-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-6B	MW-06B-120515	N	5/15/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-121114	N	11/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-130521	N	5/21/2013	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-131112	N	11/12/2013	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-140507	N	5/7/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-150429	N	4/29/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-6B	MW-06B-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6B	MW-6B-161101	N	11/1/2016	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	5 UJ	--	--	0.5 UJ	5 UJ
BDC-MW-6B	MW-6B-170502	N	5/2/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**7.2 J**	--	--	0.5 UJ	5 UJ
BDC-MW-6B	MW-6B-171108	N	11/8/2017	0.5 UJ	0.5 UJ	0.2 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	1.0 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**5.8 J**	--	--	0.5 UJ	5.0 UJ
BDC-MW-6B	MW-6B-180501	N	5/1/2018	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 UJ	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-6B	MW-06B-DUP-031117	FD	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-040504	N	5/4/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-040823	N	8/23/2004	1 U	1 U	5 U	30 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**13**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-041019	N	10/19/2004	1 U	1 U	5 U	**98**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-050222	N	2/22/2005	1 U	1 U	5 U	**1000**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**11**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-050516	N	5/16/2005	2 U	2 U	10 U	**1800**	100 U	10 U	2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	**5.5**	2 U	--	2 U	2 U
BDC-MW-6B	MW-06B-050822	N	8/22/2005	1 U	1 U	5 U	**160**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-051114	N	11/14/2005	1 U	1 U	5 U	**62**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-060222	N	2/22/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-060518	N	5/18/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-060816	N	8/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-061129	N	11/29/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.4**	0.2 U	--	0.2 U	0.2 U
BDC-MW-6B	DC-MW6B-070223	N	2/23/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**3.8**	1.0 U	--	1.0 U	1.0 U
BDC-MW-6B	MW-06B-070524	N	5/24/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-071130	N	11/30/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-6B	MW-06B-080521	N	5/21/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-081125	N	11/25/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-090520	N	5/20/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-091119	N	11/19/2009	1 U	1 U	5 U	10 U	10 UJ	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-100524	N	5/24/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-101111	N	11/11/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-110504	N	5/4/2011	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6B	MW-06B-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-6B	MW-06B-120515	N	5/15/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.5**	0.2 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-121114	N	11/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-130521	N	5/21/2013	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-131112	N	11/12/2013	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-140507	N	5/7/2014	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-150429	N	4/29/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-6B	MW-06B-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--
BDC-MW-6B	MW-6B-161101	N	11/1/2016	0.5 UJ	0.5 UJ	5 UJ	**9.6 J**	25 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	**1.3 J**	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	**0.5 J**	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-6B	MW-6B-170502	N	5/2/2017	0.5 UJ	0.5 UJ	5 UJ	**14 J**	25 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	**1.5 J**	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-6B	MW-6B-171108	N	11/8/2017	0.5 UJ	0.5 UJ	5.0 UJ	**12 J**	25 UJ	5.0 UJ	0.2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	0.5 UJ	**1.2 J**	0.2 UJ	0.5 UJ	0.5 UJ	0.2 UJ	0.5 UJ	0.2 UJ	0.2 UJ	--	0.5 UJ	0.5 UJ
BDC-MW-6B	MW-6B-180501	N	5/1/2018	2.00 U	2.00 U	50.0 U	50.0 U	50.0 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6B	MW-06B-DUP-031117	FD	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.6**	1 U	--	1 U	1 U	5 U	**1**	1 U	2 U	--	5 U	**18**
BDC-MW-6B	MW-06B-040504	N	5/4/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**9.5**	1 U	--	1 U	1 U	5 U	**3.2**	1 U	2 U	--	5 U	**9.4**
BDC-MW-6B	MW-06B-040823	N	8/23/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U	5 U	**1.2**	1 U	2 U	--	5 U	**2.3**
BDC-MW-6B	MW-06B-041019	N	10/19/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.6**
BDC-MW-6B	MW-06B-050222	N	2/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6B	MW-06B-050516	N	5/16/2005	--	2 U	2 U	10 U	2 U	2 U	2 U	4 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	10 U	2 U	2 U	4 U	--	10 U	2 U
BDC-MW-6B	MW-06B-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.6**
BDC-MW-6B	MW-06B-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.3**
BDC-MW-6B	MW-06B-060222	N	2/22/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**10**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.4**
BDC-MW-6B	MW-06B-060518	N	5/18/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**12**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.3**
BDC-MW-6B	MW-06B-060816	N	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.9**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.1**
BDC-MW-6B	MW-06B-061129	N	11/29/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**1.8**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**2.6**
BDC-MW-6B	DC-MW6B-070223	N	2/23/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	**9.5**
BDC-MW-6B	MW-06B-070524	N	5/24/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.5**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.5**
BDC-MW-6B	MW-06B-071130	N	11/30/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.9**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**1 J**
BDC-MW-6B	MW-06B-080521	N	5/21/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6B	MW-06B-081125	N	11/25/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6B	MW-06B-090520	N	5/20/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6B	MW-06B-091119	N	11/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6B	MW-06B-100524	N	5/24/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	**4.2**
BDC-MW-6B	MW-06B-101111	N	11/11/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	**5.4**
BDC-MW-6B	MW-06B-110504	N	5/4/2011	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**5.2**
BDC-MW-6B	MW-06B-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**0.8**
BDC-MW-6B	MW-06B-120515	N	5/15/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**6**
BDC-MW-6B	MW-06B-121114	N	11/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**3.7**
BDC-MW-6B	MW-06B-130521	N	5/21/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	5 UJ	0.5 U	0.5 U	0.5 U	--	0.5 U	**4.3**
BDC-MW-6B	MW-06B-131112	N	11/12/2013	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.5**
BDC-MW-6B	MW-06B-140507	N	5/7/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**2.4**
BDC-MW-6B	MW-06B-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.8**
BDC-MW-6B	MW-06B-150429	N	4/29/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	**1.8**
BDC-MW-6B	MW-06B-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	0.2 U	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	**1**
BDC-MW-6B	MW-06B-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	2 U
BDC-MW-6B	MW-6B-161101	N	11/1/2016	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**0.9 J**	--	0.2 UJ	0.2 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	**0.2 J**
BDC-MW-6B	MW-6B-170502	N	5/2/2017	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	**0.7 J**	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**0.3 J**	--	0.2 UJ	0.2 UJ	5 UJ	0.2 UJ	0.5 UJ	0.5 UJ	--	0.5 UJ	**0.3 J**
BDC-MW-6B	MW-6B-171108	N	11/8/2017	--	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.2 UJ	**0.4 J**	--	0.2 UJ	0.2 UJ	5.0 UJ	0.2 UJ	0.5 UJ	--	--	0.5 UJ	**0.6 J**
BDC-MW-6B	MW-6B-180501	N	5/1/2018	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6B	MW-6B-181106	N	11/6/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.50 U	0.50 U	0.20 U	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-6B	MW-6B-190501	N	5/1/2019	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 U	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-6B	MW-6B-191120	N	11/20/2019	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	5.00 U	5.00 U	2.00 U	5.00 U	--	2.00 U	2.00 U	--	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	50.0 U	--	--	2.00 U	50.0 U
BDC-MW-6C	6C1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.9 J**	--	--	--	--	--	--	--	--	--	**230**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**28**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6.7**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-951027	N	10/27/1995	--	5 U	5 U	5 U	--	5 U	--	--	--	--	--	--	--	--	5 U	5 U	--	5 U	--	5 U	--	5 U	--	20 U	10 U	5 U	--	5 U
BDC-MW-6C	MW-06C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-981022	N	10/22/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-6C	MW-06C-990616	N	6/16/1999	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-6C	MW-06C-991122	N	11/22/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-000608	N	6/8/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-001201	N	12/1/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-011205	N	12/5/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-020610	N	6/10/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-021205	N	12/5/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-030602	N	6/2/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-6C	MW-06C-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	**1.3**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-040504	N	5/4/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-DUP-040504	FD	5/4/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-040823	N	8/23/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**360**	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-041019	N	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**140**	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-050222	N	2/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**430**	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-050516	N	5/16/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**220**	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**15**	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-6B	MW-6B-181106	N	11/6/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-6B	MW-6B-190501	N	5/1/2019	2.00 U	2.00 U	50.0 U	50.0 U	50.0 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-6B	MW-6B-191120	N	11/20/2019	2.00 U	2.00 U	50.0 U	50.0 U	50.0 U	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 UJ	10.0 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U
BDC-MW-6C	6C1-890801	N	8/1/1989	--	--	--	--	--	--	**0.4 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-6C	MW-06C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**28**	--	--	--	--
BDC-MW-6C	MW-06C-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**6.7**	--	--	--	--
BDC-MW-6C	MW-06C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**7.9**	--	--	--	--
BDC-MW-6C	MW-06C-950501	N	5/1/1995	--	--	--	--	--	--	**8.64**	--	--	--	--	--	--	--	--	--	--	--	--	**14.57**	--	--	--	--
BDC-MW-6C	MW-06C-951027	N	10/27/1995	--	--	5 U	5 U	--	--	**230.09**	--	--	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**151.43**	5 U	--	5 U	--
BDC-MW-6C	MW-06C-960201	N	2/1/1996	--	--	--	--	--	--	**29.96**	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--
BDC-MW-6C	MW-06C-960501	N	5/1/1996	--	--	--	--	--	--	**13.7**	--	--	--	--	--	--	--	--	--	--	--	--	**1.01**	--	--	--	--
BDC-MW-6C	MW-06C-960801	N	8/1/1996	--	--	--	--	--	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	**107**	--	--	--	--
BDC-MW-6C	MW-06C-961101	N	11/1/1996	--	--	--	--	--	--	**2.9**	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--
BDC-MW-6C	MW-06C-970201	N	2/1/1997	--	--	--	--	--	--	**3.4**	--	--	--	--	--	--	--	--	--	--	--	--	**3.1**	--	--	--	--
BDC-MW-6C	MW-06C-970501	N	5/1/1997	--	--	--	--	--	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	**22.1**	--	--	--	--
BDC-MW-6C	MW-06C-970801	N	8/1/1997	--	--	--	--	--	--	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	**28.3**	--	--	--	--
BDC-MW-6C	MW-06C-971101	N	11/1/1997	--	--	--	--	--	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	**12.3**	--	--	--	--
BDC-MW-6C	MW-06C-980601	N	6/1/1998	--	--	--	--	--	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-MW-6C	MW-06C-981022	N	10/22/1998	1 U	1 U	1 U	**4.5**	5 U	5 U	**5.7**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**181 J**	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-990616	N	6/16/1999	2 U	2 U	2 U	5.94 U	6.48 U	2 U	**2.8**	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-6C	MW-06C-991122	N	11/22/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**2.7**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-000608	N	6/8/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-001201	N	12/1/2000	--	--	--	--	--	--	**2.76**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-6C	MW-06C-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.94 J**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-011205	N	12/5/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	**1.7**	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-020610	N	6/10/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-021205	N	12/5/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-030602	N	6/2/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	**2.2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-040504	N	5/4/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-DUP-040504	FD	5/4/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-040823	N	8/23/2004	1 U	1 U	5 U	43 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-041019	N	10/19/2004	1 U	1 U	5 U	**34**	50 U	1 U	**1.9**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-050222	N	2/22/2005	1 U	1 U	5 U	**160**	50 U	5 U	**1.2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.6**	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-050516	N	5/16/2005	1 U	1 U	5 U	**250**	50 U	5 U	**1.7**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-050822	N	8/22/2005	1 U	1 U	5 U	**20**	50 U	5 U	**1.9**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6B	MW-6B-181106	N	11/6/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	0.50 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-6B	MW-6B-190501	N	5/1/2019	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 U	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-6B	MW-6B-191120	N	11/20/2019	--	2.00 U	2.00 U	5.00 U	2.00 U	4.00 U	10.0 U	10.0 U	5.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	--	2.00 U	2.00 U	10.0 UJ	2.00 U	2.00 U	--	--	2.00 U	2.00 U
BDC-MW-6C	6C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.5 J**	ND	ND	--	--	--	**7.2**	--	--	--	--	**1.6 J**
BDC-MW-6C	MW-06C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**54**	--	--	--	--	--	**21**	--	--	--	--	ND
BDC-MW-6C	MW-06C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	**26**
BDC-MW-6C	MW-06C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**22**	--	--	--	--	--	**1.6**	--	--	--	--	**30**
BDC-MW-6C	MW-06C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**20.89**
BDC-MW-6C	MW-06C-951027	N	10/27/1995	--	5 U	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	5 U	5 U	10 U	5 U	5 U	--	**36.7**	--	--	--	--	**48.04**
BDC-MW-6C	MW-06C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**38.34**
BDC-MW-6C	MW-06C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	**29.26**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**22.06**
BDC-MW-6C	MW-06C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**10.4**	--	--	--	--	--	--	2 U	--	--	--	--	--	2 U	--	--	--	--	**164**
BDC-MW-6C	MW-06C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	**9.1**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**12**
BDC-MW-6C	MW-06C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	**8.8**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**18.3**
BDC-MW-6C	MW-06C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	**7.2**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**50.3**
BDC-MW-6C	MW-06C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**39.5**
BDC-MW-6C	MW-06C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**18.4**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**26.1**
BDC-MW-6C	MW-06C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	**3**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**6**
BDC-MW-6C	MW-06C-981022	N	10/22/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	**25.1**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	**91.6**	1 U	--	--	--	**54.6**
BDC-MW-6C	MW-06C-990616	N	6/16/1999	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	**3.4**	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2.92 U	--	--	--	**4.4**
BDC-MW-6C	MW-06C-991122	N	11/22/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-6C	MW-06C-000608	N	6/8/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**7.7**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-6C	MW-06C-001201	N	12/1/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-6C	MW-06C-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**9.73 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-6C	MW-06C-011205	N	12/5/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**2.8**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	**5**	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-6C	MW-06C-020610	N	6/10/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-6C	MW-06C-021205	N	12/5/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-6C	MW-06C-030602	N	6/2/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**220**	1 U	1 U	**1.5**	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-040504	N	5/4/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**14**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-DUP-040504	FD	5/4/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**16**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-040823	N	8/23/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-041019	N	10/19/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-050222	N	2/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-050516	N	5/16/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.2**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6C	MW-06C-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**13**	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-060222	N	2/22/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-060518	N	5/18/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-061129	N	11/29/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.2**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-6C	DC-MW6C-070223	N	2/23/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-6C	MW-06C-070524	N	5/24/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-071130	N	11/30/2007	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.2**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-6C	MW-06C-080521	N	5/21/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-081125	N	11/25/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**990**	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-090520	N	5/20/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-091119	N	11/19/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	5 U	--	1 U	5 U
BDC-MW-6C	MW-06C-100504	N	5/4/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.0 U	--	--	--	--
BDC-MW-7A	7A1-890801	N	8/1/1989	--	--	--	--	--	**1.1 J**	**1.4 J**	--	--	--	--	--	--	--	--	--	--	--	**110**	--	--	--	--	--	--	--	--	--	--
BDC-MW-7A	MW-07A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**71**	--	--	--	--	--	--	--	--	--	--
BDC-MW-7C	7C1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	--	--	**28**	--	--	--	--	--	--	--	--	--	--
BDC-MW-7C	MW-07C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**92**	--	--	--	--	--	--	--	--	--	--
BDC-MW-8A	8A1-890801	N	8/1/1989	--	--	--	--	--	ND	**1 J**	--	--	--	--	--	--	--	--	--	--	--	**230**	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	8C1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.5 J**	--	--	--	--	--	--	--	--	--	--	--	**120**	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**38**	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-981019	N	10/19/1998	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	20 U	10 U	--	5 U	5 U
BDC-MW-8C	MW-08C-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-991117	N	11/17/1999	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-6C	MW-06C-051114	N	11/14/2005	1 U	1 U	5 U	**27**	50 U	5 U	**1.9**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-060222	N	2/22/2006	1 U	1 U	5 U	5 U	50 U	5 U	**1.3**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-060518	N	5/18/2006	1 U	1 U	5 U	5 U	50 U	5 U	**1.3**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-060816	N	8/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	**1.2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-061129	N	11/29/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**1.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-6C	DC-MW6C-070223	N	2/23/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-6C	MW-06C-070524	N	5/24/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-071130	N	11/30/2007	0.2 U	0.2 U	1 U	3 U	5 U	1 U	**0.9**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-6C	MW-06C-080521	N	5/21/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-081125	N	11/25/2008	1 U	1 U	5 U	**96**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-090520	N	5/20/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-091119	N	11/19/2009	1 U	1 U	5 U	10 U	10 UJ	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-6C	MW-06C-100504	N	5/4/2010	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-7A	7A1-890801	N	8/1/1989	--	--	--	--	--	--	**0.4 J**	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-7A	MW-07A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-7C	7C1-890801	N	8/1/1989	--	--	--	--	--	--	**0.6 J**	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-7C	MW-07C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8A	8A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	8C1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**0.5 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-8C	MW-08C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**38**	--	--	--	--
BDC-MW-8C	MW-08C-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**1.9**	--	--	--	--
BDC-MW-8C	MW-08C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**44**	--	--	--	--
BDC-MW-8C	MW-08C-950501	N	5/1/1995	--	--	--	--	--	--	**225.74**	--	--	--	--	--	--	--	--	--	--	--	--	**14.95**	--	--	--	--
BDC-MW-8C	MW-08C-951001	N	10/1/1995	--	--	--	--	--	--	**135.58**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-8C	MW-08C-960201	N	2/1/1996	--	--	--	--	--	--	**104.73**	--	--	--	--	--	--	--	--	--	--	--	--	**5.55 J**	--	--	--	--
BDC-MW-8C	MW-08C-960501	N	5/1/1996	--	--	--	--	--	--	**104.6**	--	--	--	--	--	--	--	--	--	--	--	--	**8**	--	--	--	--
BDC-MW-8C	MW-08C-960801	N	8/1/1996	--	--	--	--	--	--	**31.8**	--	--	--	--	--	--	--	--	--	--	--	--	**1.1**	--	--	--	--
BDC-MW-8C	MW-08C-961101	N	11/1/1996	--	--	--	--	--	--	**121**	--	--	--	--	--	--	--	--	--	--	--	--	**37.6**	--	--	--	--
BDC-MW-8C	MW-08C-970201	N	2/1/1997	--	--	--	--	--	--	**27.5**	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-8C	MW-08C-970501	N	5/1/1997	--	--	--	--	--	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	**37.3**	--	--	--	--
BDC-MW-8C	MW-08C-970801	N	8/1/1997	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--	--	--	--	--	--	**46.1**	--	--	--	--
BDC-MW-8C	MW-08C-971101	N	11/1/1997	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--	--	--	--	--	--	**42.3**	--	--	--	--
BDC-MW-8C	MW-08C-980601	N	6/1/1998	--	--	--	--	--	--	**13.6**	--	--	--	--	--	--	--	--	--	--	--	--	**38.4**	--	--	--	--
BDC-MW-8C	MW-08C-981019	N	10/19/1998	5 U	5 U	5 U	**12.5**	25 U	25 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BDC-MW-8C	MW-08C-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-991117	N	11/17/1999	2 U	2 U	2 U	5.94 U	6.48 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-6C	MW-06C-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-060222	N	2/22/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-060518	N	5/18/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-060816	N	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-061129	N	11/29/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**5.2**	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	**0.8**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-6C	DC-MW6C-070223	N	2/23/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-6C	MW-06C-070524	N	5/24/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-071130	N	11/30/2007	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**4.6**	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**0.3**
BDC-MW-6C	MW-06C-080521	N	5/21/2008	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-081125	N	11/25/2008	--	**1.5**	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-090520	N	5/20/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-091119	N	11/19/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-6C	MW-06C-100504	N	5/4/2010	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-7A	7A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**57**	ND	ND	--	--	--	**56**	--	--	--	**27**
BDC-MW-7A	MW-07A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.9**	--	--	--	--	--	**28**	--	--	--	**33**
BDC-MW-7C	7C1-890801	N	8/1/1989	--	**0.6 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	**27**	ND	**1 J**	--	--	--	**55**	--	--	--	**20**
BDC-MW-7C	MW-07C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**580**	--	--	--	--	--	**180**	--	--	--	ND
BDC-MW-8A	8A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**1200**	ND	ND	--	--	--	**380**	--	--	--	**21**
BDC-MW-8C	8C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**150**	ND	ND	--	--	--	**68**	--	--	--	**14**
BDC-MW-8C	MW-08C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**95**	--	--	--	--	--	**36**	--	--	--	**25**
BDC-MW-8C	MW-08C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.0**	--	--	--	--	--	**13**	--	--	--	ND
BDC-MW-8C	MW-08C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**16**	--	--	--	--	--	**21**	--	--	--	**130**
BDC-MW-8C	MW-08C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	**3.16**	--	--	--	**42.13**
BDC-MW-8C	MW-08C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	**32.69**
BDC-MW-8C	MW-08C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	**35.33**
BDC-MW-8C	MW-08C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	**351.9**	--	--	--	--	--	--	3.33 U	--	--	--	--	--	3.33 U	--	--	--	**35.96**
BDC-MW-8C	MW-08C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**401**	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	**129**
BDC-MW-8C	MW-08C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	**155**	--	--	--	--	--	--	**13.5**	--	--	--	--	--	**26.2**	--	--	--	**41.2**
BDC-MW-8C	MW-08C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	**370**	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	**201**
BDC-MW-8C	MW-08C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	**234**	--	--	--	--	--	--	4 U	--	--	--	--	--	4 U	--	--	--	**488**
BDC-MW-8C	MW-08C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	**118**	--	--	--	--	--	--	4 U	--	--	--	--	--	4 U	--	--	--	**256**
BDC-MW-8C	MW-08C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**292**	--	--	--	--	--	--	4 U	--	--	--	--	--	4 U	--	--	--	**210**
BDC-MW-8C	MW-08C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	**600 J**	--	--	--	--	--	--	**7.8**	--	--	--	--	--	**26.6**	--	--	--	**20.6**
BDC-MW-8C	MW-08C-981019	N	10/19/1998	5 U	5 U	5 U	5 U	5 U	--	--	5 U	**38.6**	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	--	5 U	5 U	--	--	--	5 U
BDC-MW-8C	MW-08C-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**230**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**49.7**
BDC-MW-8C	MW-08C-991117	N	11/17/1999	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	**137**	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2.92 U	--	--	--	**21.4**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-8C	MW-08C-000605	N	6/5/2000	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-8C	MW-08C-001202	N	12/2/2000	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-8C	MW-08C-010607	N	6/7/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-DUP-011204	FD	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	**1**	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-8C	MW-08C-030601	N	6/1/2003	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	9 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	3 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-8C	MW-08C-031117	N	11/17/2003	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-8C	MW-08C-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-DUP-040503	FD	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-041025	N	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-DUP-041025	FD	10/25/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-050512	N	5/12/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-060515	N	5/15/2006	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	50 U	50 U	--	10 U	50 U
BDC-MW-8C	MW-08C-061127	N	11/27/2006	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-8C	MW-08C-DUP-061127	FD	11/27/2006	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-8C	MW-08C-070521	N	5/21/2007	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	6 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	3 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-8C	DC-MW8C-071129	N	11/29/2007	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	25 U	10 U	25 U	5.0 U	25 U	--	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25 U	25 U	--	5.0 U	25 U
BDC-MW-8C	MW-08C-080519	N	5/19/2008	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-8C	MW-08C-081123	N	11/23/2008	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-8C	MW-08C-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-8C	MW-08C-091116	N	11/16/2009	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	6 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	15 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-9A	9A1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.9 J**	--	--	--	--	--	--	--	--	--	--	**200**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	9A1A-890801	N	8/1/1989	--	--	--	--	--	ND	**1 J**	--	--	--	--	--	--	--	--	--	--	**440**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**15000**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**620**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-8C	MW-08C-000605	N	6/5/2000	2 U	2 U	2 U	5.94 U	6.48 U	2 U	**15.8**	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	**3.2**	2 U	--	2 U	2 U
BDC-MW-8C	MW-08C-001202	N	12/2/2000	2 U	2 U	2 U	5.94 U	6.48 U	2 U	2 U	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-8C	MW-08C-010607	N	6/7/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-011204	N	12/4/2001	1 U	1 U	1 U	**4**	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-DUP-011204	FD	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	**5.4**	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	**4.4**	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-030601	N	6/1/2003	3 U	3 U	15 U	15 U	150 U	3 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U
BDC-MW-8C	MW-08C-031117	N	11/17/2003	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-8C	MW-08C-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	**2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-DUP-040503	FD	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	**1.8**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-041025	N	10/25/2004	1 U	1 U	5 U	**5.8**	50 U	1 U	**1.3**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-DUP-041025	FD	10/25/2004	1 U	1 U	5 U	5 U	50 U	1 U	**1.2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-050512	N	5/12/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-060515	N	5/15/2006	10 U	10 U	50 U	50 U	500 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-8C	MW-08C-061127	N	11/27/2006	5 U	5 U	25 U	25 U	250 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-8C	MW-08C-DUP-061127	FD	11/27/2006	5 U	5 U	25 U	25 U	250 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-8C	MW-08C-070521	N	5/21/2007	3 U	3 U	15 U	15 U	150 U	15 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U
BDC-MW-8C	DC-MW8C-071129	N	11/29/2007	5.0 U	5.0 U	25 U	25 U	250 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U
BDC-MW-8C	MW-08C-080519	N	5/19/2008	5 U	5 U	25 U	25 U	50 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-8C	MW-08C-081123	N	11/23/2008	5 U	5 U	25 U	25 U	50 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-8C	MW-08C-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-8C	MW-08C-091116	N	11/16/2009	3 U	3 U	15 U	30 U	30 U	15 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U
BDC-MW-9A	9A1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**0.7 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	9A1A-890801	N	8/1/1989	--	--	--	--	--	--	**0.5 J**	--	--	**0.7 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**15000**	--	--	--	--
BDC-MW-9A	MW-09A-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**620**	--	--	--	--
BDC-MW-9A	MW-09A-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**2500**	--	--	--	--
BDC-MW-9A	MW-09A-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**5790.9**	--	--	--	--
BDC-MW-9A	MW-09A-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**3286**	--	--	--	--
BDC-MW-9A	MW-09A-960201	N	2/1/1996	--	--	--	--	--	--	500 U	--	--	--	--	--	--	--	--	--	--	--	--	**7484**	--	--	--	--
BDC-MW-9A	MW-09A-960501	N	5/1/1996	--	--	--	--	--	--	50 U	--	--	--	--	--	--	--	--	--	--	--	--	**6143**	--	--	--	--
BDC-MW-9A	MW-09A-960801	N	8/1/1996	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	--	--	--	--	--	--	**443**	--	--	--	--
BDC-MW-9A	MW-09A-961101	N	11/1/1996	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**816**	--	--	--	--
BDC-MW-9A	MW-09A-970201	N	2/1/1997	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--	--	--	--	--	--	**520**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-8C	MW-08C-000605	N	6/5/2000	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	**109.2**	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2.92 U	--	--	--	**2.4**
BDC-MW-8C	MW-08C-001202	N	12/2/2000	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	**174.1**	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2.92 U	--	--	--	2 U
BDC-MW-8C	MW-08C-010607	N	6/7/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**125**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-8C	MW-08C-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**210**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-8C	MW-08C-DUP-011204	FD	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**250**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-8C	MW-08C-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	**180 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-8C	MW-08C-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	**290**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 UJ
BDC-MW-8C	MW-08C-030601	N	6/1/2003	--	3 U	3 U	15 U	3 U	3 U	3 U	6 U	**390**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-8C	MW-08C-031117	N	11/17/2003	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**300**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-8C	MW-08C-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**130**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.8**
BDC-MW-8C	MW-08C-DUP-040503	FD	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**130**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.4**
BDC-MW-8C	MW-08C-041025	N	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**180**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.5**
BDC-MW-8C	MW-08C-DUP-041025	FD	10/25/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**170**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.2**
BDC-MW-8C	MW-08C-050512	N	5/12/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**130**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-8C	MW-08C-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**82**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-8C	MW-08C-060515	N	5/15/2006	--	10 U	10 U	50 U	10 U	10 U	10 U	20 U	**910**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	10 U
BDC-MW-8C	MW-08C-061127	N	11/27/2006	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**440**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-8C	MW-08C-DUP-061127	FD	11/27/2006	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**430**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-8C	MW-08C-070521	N	5/21/2007	--	3 U	3 U	15 U	3 U	3 U	3 U	6 U	**500**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-8C	DC-MW8C-071129	N	11/29/2007	--	5.0 U	5.0 U	25 U	5.0 U	5.0 U	5.0 U	10 U	**540**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U	5.0 U	25 U	5.0 U	5.0 U	--	--	25 U	5.0 U
BDC-MW-8C	MW-08C-080519	N	5/19/2008	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	**180**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-8C	MW-08C-081123	N	11/23/2008	--	5 U	5 U	25 U	5 U	10 U	5 U	10 U	**1100**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	5 U	5 U	10 U	--	25 U	5 U
BDC-MW-8C	MW-08C-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**62**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-8C	MW-08C-091116	N	11/16/2009	--	3 U	3 U	15 U	3 U	6 U	3 U	6 U	**65**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-9A	9A1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**3400**	ND	ND	--	--	--	**240**	--	--	--	--	**22**
BDC-MW-9A	9A1A-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**2400**	ND	ND	--	--	--	**510**	--	--	--	--	**26**
BDC-MW-9A	MW-09A-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1200**	--	--	--	--	--	**7400**	--	--	--	--	**2000**
BDC-MW-9A	MW-09A-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**370**	--	--	--	--	--	**1200**	--	--	--	--	**350**
BDC-MW-9A	MW-09A-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**420**	--	--	--	--	--	**500**	--	--	--	--	**240**
BDC-MW-9A	MW-09A-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2568.25**	--	--	--	--	--	**1796.5**	--	--	--	--	**917.05**
BDC-MW-9A	MW-09A-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1589**	--	--	--	--	--	**1507**	--	--	--	--	**449**
BDC-MW-9A	MW-09A-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1970**	--	--	--	--	--	**2318**	--	--	--	--	**1385**
BDC-MW-9A	MW-09A-960501	N	5/1/1996	--	--	--	--	--	--	--	--	50 U	--	--	--	--	--	--	**785.7**	--	--	--	--	--	**1160**	--	--	--	--	**844.9**
BDC-MW-9A	MW-09A-960801	N	8/1/1996	--	--	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	**114**	--	--	--	--	--	**90.8**	--	--	--	--	**124**
BDC-MW-9A	MW-09A-961101	N	11/1/1996	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	**272**	--	--	--	--	--	**191**	--	--	--	--	**228**
BDC-MW-9A	MW-09A-970201	N	2/1/1997	--	--	--	--	--	--	--	--	4 U	--	--	--	--	--	--	**98**	--	--	--	--	--	**49.3**	--	--	--	--	**80.9**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9A	MW-09A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-09A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	**1**	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-9A	MW-09A-981022	N	10/22/1998	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	40 U	20 U	--	10 U	10 U
BDC-MW-9A	MW-09A-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-991117	N	11/17/1999	10 U	10 U	10 U	10 U	--	10 U	11.8 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-9A	MW-09A-000605	N	6/5/2000	10 U	10 U	10 U	10 U	--	10 U	11.8 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-9A	MW-09A-001202	N	12/2/2000	5 U	5 U	5 U	5 U	--	5 U	5.9 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-9A	MW-09A-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	**5**	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-030601	N	6/1/2003	15 U	15 U	15 U	15 U	--	15 U	15 U	15 U	75 U	45 U	75 U	15 U	75 U	--	15 U	15 U	--	15 U	15 U	15 U	15 U	15 U	15 U	75 U	75 U	--	15 U	75 U
BDC-MW-9A	MW-09A-031117	N	11/17/2003	20 U	20 U	20 U	20 U	--	20 U	20 U	20 U	100 U	60 U	100 U	20 U	100 U	--	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U	20 U	100 U	100 U	--	20 U	100 U
BDC-MW-9A	MW-09A-040503	N	5/3/2004	20 U	20 U	20 U	20 U	--	20 U	20 U	20 U	100 U	60 U	100 U	20 U	100 U	--	20 U	20 U	--	20 U	20 U	20 U	20 U	20 U	20 U	100 U	100 U	--	20 U	100 U
BDC-MW-9A	MW-09A-040823	N	8/23/2004	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	9 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	3 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-9A	MW-09A-041019	N	10/19/2004	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-9A	MW-09A-050221	N	2/21/2005	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	**820**	50 U	--	10 U	50 U
BDC-MW-9A	MW-09A-050511	N	5/11/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**1200**	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**140**	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-060221	N	2/21/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-9A	DC-MW9A-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-9A	MW-09A-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-DUP-070522	FD	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	DC-MW9A-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-9A	MW-09A-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**0.2**	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-9A	MW-09A-DUP-080519	FD	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-9A	MW-09A-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**4100**	5 U	--	1 U	**6.3**
BDC-MW-9A	MW-09A-DUP-081124	FD	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**3600**	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-090518	N	5/18/2009	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	50 U	10 U	10 U	**2000**	50 U	--	10 U	50 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-9A	MW-09A-970501	N	5/1/1997	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**258**	--	--	--	--
BDC-MW-9A	MW-09A-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**206 J**	--	--	--	--
BDC-MW-9A	MW-09A-971101	N	11/1/1997	--	--	--	--	--	--	4 U	--	--	--	--	--	--	--	--	--	--	--	--	**199**	--	--	--	--
BDC-MW-9A	MW-09A-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**94.3**	--	--	--	--
BDC-MW-9A	MW-09A-981019	N	10/19/1998	1 U	1 U	1 U	**2.8**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**680**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-981022	N	10/22/1998	10 U	10 U	10 U	**46**	50 U	50 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**614**	10 U	--	10 U	10 U
BDC-MW-9A	MW-09A-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**15.5**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-991117	N	11/17/1999	10 U	10 U	10 U	29.7 U	32.4 U	10 U	10 U	10 U	10 U	10 U	--	12.8 U	13.9 U	10 U	19.2 U	10 U	10 U	10 U	10 U	**187**	10 U	--	10 U	10 U
BDC-MW-9A	MW-09A-000605	N	6/5/2000	10 U	10 U	10 U	29.7 U	32.4 U	10 U	10 U	10 U	10 U	10 U	--	12.8 U	13.9 U	10 U	19.2 U	10 U	10 U	10 U	10 U	**421**	10 U	--	10 U	10 U
BDC-MW-9A	MW-09A-001202	N	12/2/2000	5 U	5 U	5 U	14.85 U	16.2 U	5 U	5 U	5 U	5 U	5 U	--	6.4 U	6.95 U	5 U	9.6 U	5 U	5 U	5 U	5 U	**60.75**	5 U	--	5 U	5 U
BDC-MW-9A	MW-09A-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**266.6**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**100**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**280**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1600**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-030601	N	6/1/2003	15 U	15 U	75 U	75 U	750 U	15 U	15 U	15 U	15 U	15 U	30 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	**2300**	15 U	--	15 U	15 U
BDC-MW-9A	MW-09A-031117	N	11/17/2003	20 U	20 U	100 U	100 U	1000 U	20 U	20 U	20 U	20 U	20 U	40 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	**2300**	20 U	--	20 U	20 U
BDC-MW-9A	MW-09A-040503	N	5/3/2004	20 U	20 U	100 U	100 U	1000 U	20 U	20 U	20 U	20 U	20 U	40 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	**970**	20 U	--	20 U	20 U
BDC-MW-9A	MW-09A-040823	N	8/23/2004	3 U	3 U	15 U	15 U	150 U	3 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	**370**	3 U	--	3 U	3 U
BDC-MW-9A	MW-09A-041019	N	10/19/2004	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**460**	5 U	--	5 U	5 U
BDC-MW-9A	MW-09A-050221	N	2/21/2005	10 U	10 U	50 U	**530**	500 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**41**	10 U	--	10 U	10 U
BDC-MW-9A	MW-09A-050511	N	5/11/2005	1 U	1 U	5 U	**900**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-050822	N	8/22/2005	1 U	1 U	5 U	**120**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-051114	N	11/14/2005	1 U	1 U	5 U	**9.8**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-060221	N	2/21/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-060816	N	8/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-9A	DC-MW9A-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-9A	MW-09A-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-DUP-070522	FD	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	DC-MW9A-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-9A	MW-09A-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**110**	0.2 U	--	0.2 U	0.2 U
BDC-MW-9A	MW-09A-DUP-080519	FD	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**120**	0.2 U	--	0.2 U	0.2 U
BDC-MW-9A	MW-09A-081124	N	11/24/2008	1 U	1 U	5 U	**400**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**160**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-DUP-081124	FD	11/24/2008	1 U	1 U	**5.7**	**470**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**150**	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-090518	N	5/18/2009	10 U	10 U	50 U	**2700**	100 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9A	MW-09A-970501	N	5/1/1997	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	--	**76**	--	--	--	--	--	**51.1**	--	--	--	--	**185**
BDC-MW-9A	MW-09A-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**96.9**	--	--	--	--	--	**69.2**	--	--	--	--	**127**
BDC-MW-9A	MW-09A-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**7**	--	--	--	--	--	--	**56.6**	--	--	--	--	--	**56.4**	--	--	--	--	**135**
BDC-MW-9A	MW-09A-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**39.4**	--	--	--	--	--	**15.4**	--	--	--	--	**83.8**
BDC-MW-9A	MW-09A-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**94**	1 U	2 U	**4.2**	1 U	--	**77**	1 U	--	--	--	**425**
BDC-MW-9A	MW-09A-981022	N	10/22/1998	10 U	10 U	10 U	10 U	10 U	--	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	**109**	10 U	20 U	10 U	10 U	--	**78**	10 U	--	--	--	**451**
BDC-MW-9A	MW-09A-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**5.1**	1 U	1 U	1 U	1 U	--	**3.5**	1.46 U	--	--	--	**14**
BDC-MW-9A	MW-09A-991117	N	11/17/1999	11.2 U	10 U	10 U	10 U	10 U	--	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	**38**	10 U	10 U	10 U	10 U	--	**35**	14.6 U	--	--	--	**278**
BDC-MW-9A	MW-09A-000605	N	6/5/2000	11.2 U	10 U	10 U	10 U	10 U	--	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	**40**	10 U	10 U	10 U	10 U	--	**23**	14.6 U	--	--	--	**499**
BDC-MW-9A	MW-09A-001202	N	12/2/2000	5.6 U	5 U	5 U	5 U	5 U	--	--	5 U	**8.65**	5 U	5 U	--	5 U	5 U	5 U	**36.6**	5 U	5 U	5 U	5 U	--	**24.3**	7.3 U	--	--	--	**17.95**
BDC-MW-9A	MW-09A-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**3.63 J**	1 U	1 U	--	1 U	1 U	1 U	**12.65**	1 U	1 U	**1.56 J**	1 U	--	**25.21**	1.46 U	--	--	--	**86.44**
BDC-MW-9A	MW-09A-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	**16**	1 U	1 U	**1.3**	1 U	--	**32**	1.5 U	--	--	--	**7.8**
BDC-MW-9A	MW-09A-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**14**	1 U	--	**2.9**	1 U	5 U	**24**	1 U	2.0 U	--	5 U	**46**
BDC-MW-9A	MW-09A-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**540**	1 U	--	**20**	1 U	5 U	**580**	1 U	2.0 U	--	5 U	**150**
BDC-MW-9A	MW-09A-030601	N	6/1/2003	--	15 U	15 U	75 U	15 U	15 U	15 U	30 U	75 U	15 U	15 U	15 U	15 U	15 U	15 U	**1800**	15 U	--	**31**	15 U	75 U	**990**	15 U	30 U	--	75 U	**120**
BDC-MW-9A	MW-09A-031117	N	11/17/2003	--	20 U	20 U	100 U	20 U	20 U	20 U	40 U	100 U	20 U	20 U	20 U	20 U	20 U	20 U	**1000**	20 U	--	**28**	20 U	100 U	**1500**	20 U	40 U	--	100 U	**180**
BDC-MW-9A	MW-09A-040503	N	5/3/2004	--	20 U	20 U	100 U	20 U	20 U	20 U	40 U	100 U	20 U	20 U	20 U	20 U	20 U	20 U	**150**	20 U	--	20 U	20 U	100 U	**230**	20 U	40 U	--	100 U	**37**
BDC-MW-9A	MW-09A-040823	N	8/23/2004	--	3 U	3 U	15 U	3 U	3 U	3 U	6 U	15 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	**8**	3 U	15 U	**11**	3 U	6 U	--	15 U	**150**
BDC-MW-9A	MW-09A-041019	N	10/19/2004	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	**6.6**	5 U	25 U	**19**	5 U	10 U	--	25 U	**220**
BDC-MW-9A	MW-09A-050221	N	2/21/2005	--	10 U	10 U	50 U	10 U	10 U	10 U	20 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	**37**
BDC-MW-9A	MW-09A-050511	N	5/11/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9A	MW-09A-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9A	MW-09A-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9A	MW-09A-060221	N	2/21/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9A	MW-09A-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9A	MW-09A-060816	N	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.2**
BDC-MW-9A	MW-09A-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.8**	--	**0.2**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**1.1**
BDC-MW-9A	DC-MW9A-070222	N	2/22/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.4**	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-9A	MW-09A-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.8**
BDC-MW-9A	MW-09A-DUP-070522	FD	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.7**
BDC-MW-9A	DC-MW9A-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-9A	MW-09A-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	--	**1.5**	0.2 U	1 U	**0.2**	0.2 U	0.2 U	--	1 U	**85**
BDC-MW-9A	MW-09A-DUP-080519	FD	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	--	**1.5**	0.2 U	1 U	**0.2**	0.2 U	0.2 U	--	1 U	**87**
BDC-MW-9A	MW-09A-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.9**	1 U	--	1 U	1 U	5 U	**4.6**	1 U	2 U	--	5 U	**42**
BDC-MW-9A	MW-09A-DUP-081124	FD	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	1 U	--	**1.3**	1 U	5 U	**3.9**	1 U	2 U	--	5 U	**46**
BDC-MW-9A	MW-09A-090518	N	5/18/2009	--	10 U	10 U	50 U	10 U	20 U	10 U	20 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	10 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9A	MW-09A-DUP-090518	FD	5/18/2009	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	50 U	10 U	10 U	**1900**	50 U	--	10 U	50 U
BDC-MW-9A	MW-09A-091116	N	11/16/2009	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	10 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	25 U	5 U	5 U	**440**	25 U	--	5 U	25 U
BDC-MW-9A	MW-09A-100520	N	5/20/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-101110	N	11/10/2010	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9A	MW-09A-110503	N	5/3/2011	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	5 U	5 U	5 U	2 U	5 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	50 U	10 U	--	2 U	50 UJ
BDC-MW-9A	MW-09A-111113	N	11/13/2011	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5 U	1 U	--	0.2 U	5 U
BDC-MW-9A	MW-09A-120514	N	5/14/2012	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-9A	MW-09A-121114	N	11/14/2012	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-9A	MW-09A-130521	N	5/21/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-9A	MW-09A-131112	N	11/12/2013	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-9A	MW-09A-140507	N	5/7/2014	5 U	5 U	2 U	2 U	--	5 U	2 U	5 U	5 U	10 U	5 U	5 U	5 U	--	5 U	2 U	--	5 U	5 U	5 U	5 U	5 U	5 U	50 U	--	--	5 U	50 U
BDC-MW-9A	MW-09A-141105	N	11/5/2014	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-9A	MW-09A-150429	N	4/29/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-9A	MW-09A-151026	N	10/26/2015	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 U
BDC-MW-9A	MW-09A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9A	MW-9A-161101	N	11/1/2016	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 UJ	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-9A	MW-9A-170502	N	5/2/2017	0.5 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.2 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	--	--	0.5 U	5 UJ
BDC-MW-9A	MW-9A-171108	N	11/8/2017	0.5 U	0.5 U	0.2 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 UJ	--	0.5 U	0.2 U	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	--	--	0.5 U	5.0 U
BDC-MW-9A	BDC-DUP1-180501	FD	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	**0.37**	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9A	MW-9A-180501	N	5/1/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	**0.41**	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9A	BDC-DUP1-181105	FD	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.50 U	0.50 U	**0.27**	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9A	MW-9A-181105	N	11/5/2018	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 UJ	0.50 U	0.50 U	**0.26**	0.50 UJ	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9A	BDC-DUP1-190501	FD	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9A	MW-9A-190501	N	5/1/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9A	MW-9A-191104	N	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9A	BDC-DUP1-191104	FD	11/4/2019	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	0.50 U	0.20 U	0.50 U	--	0.20 U	0.20 U	--	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5.00 U	--	--	0.20 U	5.00 U
BDC-MW-9B	9B1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.8 J**	--	--	--	--	--	--	--	--	--	--	**150**	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	9B1-DUP-890801	FD	8/1/1989	--	--	--	--	--	ND	**0.7 J**	--	--	--	--	--	--	--	--	--	--	**140**	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2100**	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-9A	MW-09A-DUP-090518	FD	5/18/2009	10 U	10 U	50 U	**2600**	100 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U
BDC-MW-9A	MW-09A-091116	N	11/16/2009	5 U	5 U	25 U	**850**	50 U	25 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U
BDC-MW-9A	MW-09A-100520	N	5/20/2010	1 U	1 U	5 U	10 U	10 U	5 UJ	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-101110	N	11/10/2010	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9A	MW-09A-110503	N	5/3/2011	2 U	2 U	50 U	50 U	50 U	10 U	2 U	2 U	2 U	2 U	2 U	2 U	10 U	2 U	2 U	2 U	2 U	2 U	5 U	2 U	2 U	--	2 U	2 U
BDC-MW-9A	MW-09A-111113	N	11/13/2011	0.2 U	0.2 U	5 U	5 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-9A	MW-09A-120514	N	5/14/2012	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	**0.2**	0.2 U	--	0.5 U	0.5 U
BDC-MW-9A	MW-09A-121114	N	11/14/2012	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-9A	MW-09A-130521	N	5/21/2013	5 U	5 U	50 U	50 U	250 UJ	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-9A	MW-09A-131112	N	11/12/2013	5 U	5 U	50 U	50 U	250 U	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-9A	MW-09A-140507	N	5/7/2014	5 U	5 U	50 U	50 U	250 UJ	50 U	2 U	5 U	5 U	5 U	--	5 U	5 U	5 U	2 U	5 U	5 U	2 U	5 U	2 U	2 U	--	5 U	5 U
BDC-MW-9A	MW-09A-141105	N	11/5/2014	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-9A	MW-09A-150429	N	4/29/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-9A	MW-09A-151026	N	10/26/2015	0.5 U	0.5 U	5 U	5 U	25 U	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-9A	MW-09A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--
BDC-MW-9A	MW-9A-161101	N	11/1/2016	0.5 U	0.5 U	5 UJ	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 UJ	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-9A	MW-9A-170502	N	5/2/2017	0.5 U	0.5 U	5 U	5 U	25 UJ	5 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-9A	MW-9A-171108	N	11/8/2017	0.5 U	0.5 U	5.0 U	5.0 U	25 UJ	5.0 U	0.2 U	0.5 U	0.5 U	0.5 U	--	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U	0.5 U	0.2 U	0.2 U	--	0.5 U	0.5 U
BDC-MW-9A	BDC-DUP1-180501	FD	5/1/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9A	MW-9A-180501	N	5/1/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9A	BDC-DUP1-181105	FD	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9A	MW-9A-181105	N	11/5/2018	0.20 U	0.20 U	5.00 U	5.00 U	5.00 UJ	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9A	BDC-DUP1-190501	FD	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9A	MW-9A-190501	N	5/1/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9A	MW-9A-191104	N	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9A	BDC-DUP1-191104	FD	11/4/2019	0.20 U	0.20 U	5.00 U	5.00 U	5.00 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.20 U	0.20 U	--	0.20 U	0.20 U
BDC-MW-9B	9B1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	9B1-DUP-890801	FD	8/1/1989	--	--	--	--	--	--	ND	--	--	ND	--	--	--	--	--	--	--	--	--	**--**	--	--	--	--
BDC-MW-9B	MW-09B-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**2100**	--	--	--	--
BDC-MW-9B	MW-09B-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**210**	--	--	--	--
BDC-MW-9B	MW-09B-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**940**	--	--	--	--
BDC-MW-9B	MW-09B-950501	N	5/1/1995	--	--	--	--	--	--	**19.76**	--	--	--	--	--	--	--	--	--	--	--	--	**5010.35**	--	--	--	--
BDC-MW-9B	MW-09B-951001	N	10/1/1995	--	--	--	--	--	--	33.3 U	--	--	--	--	--	--	--	--	--	--	--	--	**1307 J**	--	--	--	--
BDC-MW-9B	MW-09B-960201	N	2/1/1996	--	--	--	--	--	--	50 U	--	--	--	--	--	--	--	--	--	--	--	--	**3407 J**	--	--	--	--
BDC-MW-9B	MW-09B-960501	N	5/1/1996	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**1521**	--	--	--	--
BDC-MW-9B	MW-09B-960801	N	8/1/1996	--	--	--	--	--	--	**2.5**	--	--	--	--	--	--	--	--	--	--	--	--	**207**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9A	MW-09A-DUP-090518	FD	5/18/2009	--	10 U	10 U	50 U	10 U	20 U	10 U	20 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	10 U
BDC-MW-9A	MW-09A-091116	N	11/16/2009	--	5 U	5 U	25 U	5 U	10 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	1 U	5 U	10 U	--	25 U	5 U
BDC-MW-9A	MW-09A-100520	N	5/20/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 UJ	1 U
BDC-MW-9A	MW-09A-101110	N	11/10/2010	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 UJ	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9A	MW-09A-110503	N	5/3/2011	--	2 U	2 U	5 U	2 U	4 U	10 U	5 U	5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	10 U	2 U	2 U	2 U	--	10 U	2 U
BDC-MW-9A	MW-09A-111113	N	11/13/2011	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	**5.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	--	**1.1**	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-9A	MW-09A-120514	N	5/14/2012	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**9.5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	**0.3**	--	**0.8**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-9A	MW-09A-121114	N	11/14/2012	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**7.5**	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-9A	MW-09A-130521	N	5/21/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**56**	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 UJ	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-9A	MW-09A-131112	N	11/12/2013	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**23**	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 U	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-9A	MW-09A-140507	N	5/7/2014	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**9.9**	5 U	5 U	5 U	5 U	5 U	5 U	2 U	2 U	--	2 U	2 U	50 UJ	2 U	5 U	5 U	--	5 U	2 U
BDC-MW-9A	MW-09A-141105	N	11/5/2014	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**8.7**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.5**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-9A	MW-09A-150429	N	4/29/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.3**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-9A	MW-09A-151026	N	10/26/2015	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.8 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.4**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-9A	MW-09A-160419	N	4/19/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2 U	--	--	--	--	--	0.2 U	--	--	--	--	**0.7**
BDC-MW-9A	MW-9A-161101	N	11/1/2016	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.9**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.4**	0.2 U	5 UJ	0.2 U	0.5 U	0.5 U	--	0.5 U	0.2 U
BDC-MW-9A	MW-9A-170502	N	5/2/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**100**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.7**	0.2 U	5 U	0.2 U	0.5 U	0.5 U	--	0.5 UJ	0.2 U
BDC-MW-9A	MW-9A-171108	N	11/8/2017	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**5.8**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	--	**0.9**	0.2 U	5.0 U	0.2 U	0.5 U	--	--	0.5 U	**0.4**
BDC-MW-9A	BDC-DUP1-180501	FD	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	**0.51**	1.00 U	1.00 U	**80.7**	0.20 U	0.20 U	**0.45**	0.20 U	0.20 U	0.20 U	0.20 U	**0.33**	--	**0.22**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**1.28 J**
BDC-MW-9A	MW-9A-180501	N	5/1/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	**0.54**	1.00 U	1.00 U	--	0.20 U	0.20 U	**0.48**	0.20 U	0.20 U	0.20 U	0.20 U	**0.32**	--	**0.21**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	**2.23 J**
BDC-MW-9A	BDC-DUP1-181105	FD	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**5.92 J**	**5.92**	0.20 U	0.20 U	**0.30**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-9A	MW-9A-181105	N	11/5/2018	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	**4.65 J**	**9.51**	0.20 U	0.20 U	**0.28**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	0.20 U	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-9A	BDC-DUP1-190501	FD	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	**1.56 J**	0.20 U	0.20 U	**0.23**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.22**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-9A	MW-9A-190501	N	5/1/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	**3.26 J**	0.20 U	0.20 U	**0.23**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.29**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-9A	MW-9A-191104	N	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	**0.86**	0.20 U	0.20 U	**0.26**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.46**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-9A	BDC-DUP1-191104	FD	11/4/2019	--	0.20 U	0.20 U	0.50 U	0.20 U	0.40 U	1.00 U	1.00 U	**0.88**	0.20 U	0.20 U	**0.27**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	**0.47**	0.20 U	1.00 U	0.20 U	0.20 U	--	--	0.20 U	0.20 U
BDC-MW-9B	9B1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**10000**	ND	ND	--	--	--	**160**	--	--	--	--	**23**
BDC-MW-9B	9B1-DUP-890801	FD	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**8800**	ND	ND	--	--	--	**140**	--	--	--	--	**16**
BDC-MW-9B	MW-09B-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**670**	--	--	--	--	--	**720**	--	--	--	--	**830**
BDC-MW-9B	MW-09B-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**300**	--	--	--	--	--	**140**	--	--	--	--	**87**
BDC-MW-9B	MW-09B-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**820**	--	--	--	--	--	**160**	--	--	--	--	**140**
BDC-MW-9B	MW-09B-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1972.65**	--	--	--	--	--	**1462.95**	--	--	--	--	**648.6**
BDC-MW-9B	MW-09B-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**668.1**	--	--	--	--	--	**524.7**	--	--	--	--	**175.6**
BDC-MW-9B	MW-09B-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**1266**	--	--	--	--	--	**1206**	--	--	--	--	**836**
BDC-MW-9B	MW-09B-960501	N	5/1/1996	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	--	**934.6**	--	--	--	--	--	**554**	--	--	--	--	**228.2**
BDC-MW-9B	MW-09B-960801	N	8/1/1996	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	**78.9**	--	--	--	--	--	**58.6**	--	--	--	--	**104**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9B	MW-09B-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9B	MW-09B-981019	N	10/19/1998	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	40 U	20 U	--	10 U	10 U
BDC-MW-9B	MW-09B-981022	N	10/22/1998	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	40 U	20 U	--	10 U	10 U
BDC-MW-9B	MW-09B-990614	N	6/14/1999	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-9B	MW-09B-991117	N	11/17/1999	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-9B	MW-09B-000605	N	6/5/2000	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U
BDC-MW-9B	MW-09B-001202	N	12/2/2000	2 U	2 U	2 U	2 U	--	2 U	2.36 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	**17.66**	--	2 U	2 U
BDC-MW-9B	MW-09B-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-9B	MW-09B-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	**2.1**	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-DUP-031117	FD	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	**1.8**	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-040503	N	5/3/2004	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	9 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	3 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-9B	MW-09B-040823	N	8/23/2004	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-9B	MW-09B-041019	N	10/19/2004	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U	25 U	15 U	25 U	5 U	25 U	--	5 U	5 U	--	5 U	5 U	5 U	5 U	5 U	5 U	25 U	25 U	--	5 U	25 U
BDC-MW-9B	MW-09B-050221	N	2/21/2005	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	50 U	20 U	50 U	10 U	50 U	--	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	50 U	50 U	--	10 U	50 U
BDC-MW-9B	MW-09B-050511	N	5/11/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**14**	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**5**	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-060221	N	2/21/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-9B	DC-MW9B-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-9B	MW-09B-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9B	DC-MW9B-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-9B	MW-09B-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-9B	MW-09B-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**6.5**	5 U	--	1 U	5 U
BDC-MW-9B	MW-09B-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-9B	MW-09B-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**142**	--	--	--	--
BDC-MW-9B	MW-09B-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**164 J**	--	--	--	--
BDC-MW-9B	MW-09B-970501	N	5/1/1997	--	--	--	--	--	--	**7.5**	--	--	--	--	--	--	--	--	--	--	--	--	**510**	--	--	--	--
BDC-MW-9B	MW-09B-970801	N	8/1/1997	--	--	--	--	--	--	**3.1**	--	--	--	--	--	--	--	--	--	--	--	--	**35.1**	--	--	--	--
BDC-MW-9B	MW-09B-971101	N	11/1/1997	--	--	--	--	--	--	**3.3**	--	--	--	--	--	--	--	--	--	--	--	--	**111**	--	--	--	--
BDC-MW-9B	MW-09B-980601	N	6/1/1998	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	--	--	--	--	--	--	**939 J**	--	--	--	--
BDC-MW-9B	MW-09B-981019	N	10/19/1998	10 U	10 U	10 U	**21**	50 U	50 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**178**	10 U	--	10 U	10 U
BDC-MW-9B	MW-09B-981022	N	10/22/1998	10 U	10 U	10 U	**37**	50 U	50 U	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**140**	10 U	--	10 U	10 U
BDC-MW-9B	MW-09B-990614	N	6/14/1999	2 U	2 U	2 U	5.94 U	6.48 U	2 U	2 U	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	**122.04**	2 U	--	2 U	2 U
BDC-MW-9B	MW-09B-991117	N	11/17/1999	2 U	2 U	2 U	5.94 U	6.48 U	2 U	2 U	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	**41.2**	2 U	--	2 U	2 U
BDC-MW-9B	MW-09B-000605	N	6/5/2000	2 U	2 U	2 U	5.94 U	6.48 U	2 U	2 U	2 U	2 U	2 U	--	2.56 U	2.78 U	2 U	3.84 U	2 U	2 U	2 U	2 U	**102.4**	2 U	--	2 U	2 U
BDC-MW-9B	MW-09B-001202	N	12/2/2000	2 U	2 U	2 U	5.94 U	6.48 U	2 U	2 U	2 U	2 U	2 U	--	2.56 U	2.78 U	**6.76**	3.84 U	2 U	2 U	2 U	2 U	**135.2**	2 U	--	2 U	2 U
BDC-MW-9B	MW-09B-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	**112.3**	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	**1.2**	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**100**	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	180 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**180**	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**140**	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**850**	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-DUP-031117	FD	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**920**	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-040503	N	5/3/2004	3 U	3 U	15 U	15 U	150 U	3 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	**250**	3 U	--	3 U	3 U
BDC-MW-9B	MW-09B-040823	N	8/23/2004	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**530**	5 U	--	5 U	5 U
BDC-MW-9B	MW-09B-041019	N	10/19/2004	5 U	5 U	25 U	25 U	250 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	**300**	5 U	--	5 U	5 U
BDC-MW-9B	MW-09B-050221	N	2/21/2005	10 U	10 U	50 U	50 U	500 U	50 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**890**	10 U	--	10 U	10 U
BDC-MW-9B	MW-09B-050511	N	5/11/2005	1 U	1 U	5 U	**77**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**12**	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-050822	N	8/22/2005	1 U	1 U	5 U	**110**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-051114	N	11/14/2005	1 U	1 U	5 U	**47**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-060221	N	2/21/2006	1 U	1 U	5 U	**6.8**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-060816	N	8/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-061127	N	11/27/2006	0.2 U	0.2 U	1 U	**7.8**	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	--	0.2 U	0.2 U
BDC-MW-9B	DC-MW9B-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-9B	MW-09B-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	DC-MW9B-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-9B	MW-09B-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	--	0.2 U	0.2 U
BDC-MW-9B	MW-09B-081124	N	11/24/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9B	MW-09B-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9B	MW-09B-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**75.9**	--	--	--	--	--	**35.2**	--	--	--	--	**62.6**
BDC-MW-9B	MW-09B-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**44.3**	--	--	--	--	--	**28.7**	--	--	--	--	**41.7**
BDC-MW-9B	MW-09B-970501	N	5/1/1997	--	--	--	--	--	--	--	--	**13.8**	--	--	--	--	--	--	**35**	--	--	--	--	--	**31.5**	--	--	--	--	**270**
BDC-MW-9B	MW-09B-970801	N	8/1/1997	--	--	--	--	--	--	--	--	**22.4**	--	--	--	--	--	--	**10.9**	--	--	--	--	--	**4.9**	--	--	--	--	**20.9**
BDC-MW-9B	MW-09B-971101	N	11/1/1997	--	--	--	--	--	--	--	--	2 U	--	--	--	--	--	--	**21.5**	--	--	--	--	--	**15.4**	--	--	--	--	**50.7**
BDC-MW-9B	MW-09B-980601	N	6/1/1998	--	--	--	--	--	--	--	--	3.33 U	--	--	--	--	--	--	**31.3**	--	--	--	--	--	**20.65**	--	--	--	--	**439.56**
BDC-MW-9B	MW-09B-981019	N	10/19/1998	10 U	10 U	10 U	10 U	10 U	--	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	--	10 U	10 U	--	--	--	**132**
BDC-MW-9B	MW-09B-981022	N	10/22/1998	10 U	10 U	10 U	10 U	10 U	--	--	10 U	10 U	10 U	10 U	--	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	--	10 U	10 U	--	--	--	**121**
BDC-MW-9B	MW-09B-990614	N	6/14/1999	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	**3.4**	2 U	2 U	--	2 U	2 U	2 U	**6.74**	2 U	2 U	2 U	2 U	--	**7.5**	2.92 U	--	--	--	**152.36**
BDC-MW-9B	MW-09B-991117	N	11/17/1999	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	**4.6**	2 U	2 U	--	2 U	2 U	2 U	**3.6**	2 U	2 U	2 U	2 U	--	**4.8**	2.92 U	--	--	--	**66.6**
BDC-MW-9B	MW-09B-000605	N	6/5/2000	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	2 U	2 U	2 U	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	**2.6**	2.92 U	--	--	--	**82.6**
BDC-MW-9B	MW-09B-001202	N	12/2/2000	2.24 U	2 U	2 U	2 U	2 U	--	--	2 U	**11.2**	2 U	2 U	--	2 U	2 U	2 U	**6.62**	2 U	2 U	2 U	2 U	--	**11.2**	2.92 U	--	--	--	**146.7**
BDC-MW-9B	MW-09B-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**2.24 J**	1 U	1 U	--	1 U	1 U	1 U	**1.18 J**	1 U	1 U	**1.31 J**	1 U	--	**5.8 J**	1.46 U	--	--	--	**78.9**
BDC-MW-9B	MW-09B-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**3.1**	1 U	1 U	--	1 U	1 U	1 U	**2.1**	1 U	1 U	**3**	1 U	--	**4.8**	1.5 U	--	--	--	**110**
BDC-MW-9B	MW-09B-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**2.4**	1 U	5 U	**2.5**	1 U	2.0 U	--	5 U	**7.6**
BDC-MW-9B	MW-09B-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	**2.4**	1 U	5 U	**12**	1 U	2.0 U	--	5 U	**27 J**
BDC-MW-9B	MW-09B-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**1**	1 U	--	**2.2**	1 U	5 U	**9.7**	1 U	2 U	--	5 U	**19**
BDC-MW-9B	MW-09B-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**250**	1 U	--	**7.2**	1 U	5 U	**370**	1 U	2 U	--	5 U	**360**
BDC-MW-9B	MW-09B-DUP-031117	FD	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	**270**	1 U	--	**5.9**	1 U	5 U	**410**	1 U	2 U	--	5 U	**390**
BDC-MW-9B	MW-09B-040503	N	5/3/2004	--	3 U	3 U	15 U	3 U	3 U	3 U	6 U	15 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	**4**	3 U	15 U	**4.2**	3 U	6 U	--	15 U	3 U
BDC-MW-9B	MW-09B-040823	N	8/23/2004	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	**6.2**	5 U	25 U	**16**	5 U	10 U	--	25 U	**100**
BDC-MW-9B	MW-09B-041019	N	10/19/2004	--	5 U	5 U	25 U	5 U	5 U	5 U	10 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	25 U	**17**	5 U	10 U	--	25 U	**340**
BDC-MW-9B	MW-09B-050221	N	2/21/2005	--	10 U	10 U	50 U	10 U	10 U	10 U	20 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	10 U	50 U	10 U	10 U	20 U	--	50 U	**520**
BDC-MW-9B	MW-09B-050511	N	5/11/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**24**
BDC-MW-9B	MW-09B-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.7**
BDC-MW-9B	MW-09B-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9B	MW-09B-060221	N	2/21/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.3**
BDC-MW-9B	MW-09B-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9B	MW-09B-060816	N	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**3.2**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9B	MW-09B-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**12**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	**0.5**
BDC-MW-9B	DC-MW9B-070222	N	2/22/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**6.4**	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-9B	MW-09B-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.8**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9B	DC-MW9B-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-9B	MW-09B-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	**0.6**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**0.4**
BDC-MW-9B	MW-09B-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9B	MW-09B-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9B	MW-09B-091116	N	11/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	9C1-890801	N	8/1/1989	--	--	--	--	--	ND	**2.1 J**	--	--	--	--	--	--	--	--	--	**1200**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**360**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**680**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9C	MW-09C-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-9C	MW-09C-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-9C	MW-09C-DUP-021204	FD	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-9C	MW-09C-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-DUP-030601	FD	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-040823	N	8/23/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**27**	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-041019	N	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**17**	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-050221	N	2/21/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**55**	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-050511	N	5/11/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**14**	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-050822	N	8/22/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-9B	MW-09B-091116	N	11/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	9C1-890801	N	8/1/1989	--	--	--	--	--	--	**0.5 J**	--	--	**0.5 J**	--	--	--	--	--	--	--	--	--	**--**	--	--	--	--
BDC-MW-9C	MW-09C-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**360**	--	--	--	--
BDC-MW-9C	MW-09C-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**680**	--	--	--	--
BDC-MW-9C	MW-09C-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**520**	--	--	--	--
BDC-MW-9C	MW-09C-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**431.66**	--	--	--	--
BDC-MW-9C	MW-09C-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	**159.69**	--	--	--	--
BDC-MW-9C	MW-09C-960201	N	2/1/1996	--	--	--	--	--	--	10 U	--	--	--	--	--	--	--	--	--	--	--	--	**70**	--	--	--	--
BDC-MW-9C	MW-09C-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**33.67**	--	--	--	--
BDC-MW-9C	MW-09C-960801	N	8/1/1996	--	--	--	--	--	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	**29.8**	--	--	--	--
BDC-MW-9C	MW-09C-961101	N	11/1/1996	--	--	--	--	--	--	**2.4**	--	--	--	--	--	--	--	--	--	--	--	--	**1.6**	--	--	--	--
BDC-MW-9C	MW-09C-970201	N	2/1/1997	--	--	--	--	--	--	**6.3**	--	--	--	--	--	--	--	--	--	--	--	--	**4.6**	--	--	--	--
BDC-MW-9C	MW-09C-970501	N	5/1/1997	--	--	--	--	--	--	**9.3**	--	--	--	--	--	--	--	--	--	--	--	--	**2.6**	--	--	--	--
BDC-MW-9C	MW-09C-970801	N	8/1/1997	--	--	--	--	--	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	**2**	--	--	--	--
BDC-MW-9C	MW-09C-971101	N	11/1/1997	--	--	--	--	--	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	**1.7**	--	--	--	--
BDC-MW-9C	MW-09C-980601	N	6/1/1998	--	--	--	--	--	--	**1.7**	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9C	MW-09C-981019	N	10/19/1998	1 U	1 U	1 U	**4.6**	5 U	5 U	**2.5**	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.7**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.5**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	**1.36**	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	**1.1**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**6.7**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.7**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-DUP-021204	FD	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.6**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.1**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-DUP-030601	FD	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4.5**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**8.9**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**4**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-040823	N	8/23/2004	1 U	1 U	5 U	7.6 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-041019	N	10/19/2004	1 U	1 U	5 U	**12**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-050221	N	2/21/2005	1 U	1 U	5 U	**45**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-050511	N	5/11/2005	1 U	1 U	5 U	**26**	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-050822	N	8/22/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**7.6**	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.2**	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9B	MW-09B-091116	N	11/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	9C1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**64**	ND	ND	--	--	--	**1200**	--	--	--	--	**110**
BDC-MW-9C	MW-09C-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**18**	--	--	--	--	--	**97**	--	--	--	--	**130**
BDC-MW-9C	MW-09C-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	**70**	--	--	--	--	**82**
BDC-MW-9C	MW-09C-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**190**
BDC-MW-9C	MW-09C-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11.32**	--	--	--	--	--	**19.41**	--	--	--	--	**233.79**
BDC-MW-9C	MW-09C-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	**185 J**
BDC-MW-9C	MW-09C-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10 U	--	--	--	--	--	10 U	--	--	--	--	**71.74**
BDC-MW-9C	MW-09C-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	**1.24**	--	--	--	--	--	**3.54**	--	--	--	--	**50.13**
BDC-MW-9C	MW-09C-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**1.2**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**106**
BDC-MW-9C	MW-09C-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**19.4**
BDC-MW-9C	MW-09C-970201	N	2/1/1997	--	--	--	--	--	--	--	--	**8.8**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**59.8**
BDC-MW-9C	MW-09C-970501	N	5/1/1997	--	--	--	--	--	--	--	--	**6.5**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**147**
BDC-MW-9C	MW-09C-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**102.5**
BDC-MW-9C	MW-09C-971101	N	11/1/1997	--	--	--	--	--	--	--	--	**25**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**87.8**
BDC-MW-9C	MW-09C-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.1**
BDC-MW-9C	MW-09C-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-9C	MW-09C-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**9.9**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**59**
BDC-MW-9C	MW-09C-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**6.8**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	**16.4**
BDC-MW-9C	MW-09C-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9C	MW-09C-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.67**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9C	MW-09C-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.8 J**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9C	MW-09C-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	**1.3**	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-9C	MW-09C-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**18**
BDC-MW-9C	MW-09C-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**8.6 J**
BDC-MW-9C	MW-09C-DUP-021204	FD	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	**8.4 J**
BDC-MW-9C	MW-09C-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**5.6**
BDC-MW-9C	MW-09C-DUP-030601	FD	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**6.1**
BDC-MW-9C	MW-09C-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**8**
BDC-MW-9C	MW-09C-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**3.3**
BDC-MW-9C	MW-09C-040823	N	8/23/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-041019	N	10/19/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**7.7**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**1.5**
BDC-MW-9C	MW-09C-050221	N	2/21/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**68**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-050511	N	5/11/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**51**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-050822	N	8/22/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**29**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.7**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	**2.2**
BDC-MW-9C	MW-09C-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**12**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.4**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9C	MW-09C-060221	N	2/21/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-060816	N	8/16/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-061127	N	11/27/2006	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	0.5 U	--	0.2 U	3 U
BDC-MW-9C	DC-MW9C-070222	N	2/22/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-9C	MW-09C-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	DC-MW9C-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-9C	MW-09C-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	**0.3**	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-9C	MW-09C-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	**630**	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9C	MW-09C-091116	N	11/16/2009	3 U	3 U	3 U	3 U	--	3 U	3 U	3 U	15 U	6 U	15 U	3 U	15 U	--	3 U	3 U	--	3 U	3 U	3 U	15 U	3 U	3 U	15 U	15 U	--	3 U	15 U
BDC-MW-9D	9D1-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**0.9 J**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-981019	N	10/19/1998	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	4 U	2 U	--	1 U	1 U
BDC-MW-9D	MW-09D-990614	N	6/14/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-991117	N	11/17/1999	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-000605	N	6/5/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-001202	N	12/2/2000	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-010606	N	6/6/2001	1 U	1 U	1 U	1 U	--	1 U	1.18 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-011204	N	12/4/2001	1 U	1 U	1 U	1 U	--	1 U	1.2 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-020606	N	6/6/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-021204	N	12/4/2002	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 UJ	--	1 U	5 U
BDC-MW-9D	MW-09D-030601	N	6/1/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-9C	MW-09C-060221	N	2/21/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-060816	N	8/16/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-061127	N	11/27/2006	0.2 U	0.2 U	1 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-9C	DC-MW9C-070222	N	2/22/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-9C	MW-09C-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	DC-MW9C-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-9C	MW-09C-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-9C	MW-09C-081124	N	11/24/2008	1 U	1 U	5 U	**18**	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9C	MW-09C-091116	N	11/16/2009	3 U	3 U	15 U	30 U	30 U	15 U	3 U	3 U	3 U	3 U	6 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U
BDC-MW-9D	9D1-890801	N	8/1/1989	--	--	--	--	--	--	ND	--	--	**0.4 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-9D	MW-09D-910201	N	2/1/1991	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	**2.1**	--	--	--	--
BDC-MW-9D	MW-09D-930601	N	6/1/1993	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
BDC-MW-9D	MW-09D-940101	N	1/1/1994	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	**5.1**	--	--	--	--
BDC-MW-9D	MW-09D-950501	N	5/1/1995	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-951001	N	10/1/1995	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-9D	MW-09D-960201	N	2/1/1996	--	--	--	--	--	--	5 U	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--
BDC-MW-9D	MW-09D-960501	N	5/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-960801	N	8/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-961101	N	11/1/1996	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-970201	N	2/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-970501	N	5/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-970801	N	8/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-971101	N	11/1/1997	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-980601	N	6/1/1998	--	--	--	--	--	--	1 U	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--
BDC-MW-9D	MW-09D-981019	N	10/19/1998	1 U	1 U	1 U	**3.6**	5 U	5 U	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-990614	N	6/14/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-991117	N	11/17/1999	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-000605	N	6/5/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-001202	N	12/2/2000	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-010606	N	6/6/2001	1 U	1 U	1 U	2.97 U	3.24 U	1 U	1 U	1 U	1 U	1 U	--	1.28 U	1.39 U	1 U	1.92 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-011204	N	12/4/2001	1 U	1 U	1 U	3 U	3.2 U	1 U	1 U	1 U	1 U	1 U	--	1.3 U	1.4 U	1 U	1.9 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-020606	N	6/6/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-021204	N	12/4/2002	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2.0 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-030601	N	6/1/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9C	MW-09C-060221	N	2/21/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**5.1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-060816	N	8/16/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-061127	N	11/27/2006	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	0.2 U	0.3 U	**14**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-9C	DC-MW9C-070222	N	2/22/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	**18**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-9C	MW-09C-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	**5.5**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	DC-MW9C-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-9C	MW-09C-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	**6.7**	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	**0.2**
BDC-MW-9C	MW-09C-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.6**	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	**56**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9C	MW-09C-091116	N	11/16/2009	--	3 U	3 U	15 U	3 U	6 U	3 U	6 U	**69**	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	--	3 U	3 U	15 U	3 U	3 U	6 U	--	15 U	3 U
BDC-MW-9D	9D1-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**1.7 J**	ND	**0.9 J**	--	--	--	ND	--	--	--	--	**0.5 J**
BDC-MW-9D	MW-09D-910201	N	2/1/1991	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-9D	MW-09D-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	ND	--	--	--	--	ND
BDC-MW-9D	MW-09D-940101	N	1/1/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.8**	--	--	--	--	--	**2.2**	--	--	--	--	1 U
BDC-MW-9D	MW-09D-950501	N	5/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1.37**
BDC-MW-9D	MW-09D-951001	N	10/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-9D	MW-09D-960201	N	2/1/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5 U	--	--	--	--	--	5 U	--	--	--	--	5 U
BDC-MW-9D	MW-09D-960501	N	5/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-9D	MW-09D-960801	N	8/1/1996	--	--	--	--	--	--	--	--	**1.3**	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	**1**
BDC-MW-9D	MW-09D-961101	N	11/1/1996	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-9D	MW-09D-970201	N	2/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-9D	MW-09D-970501	N	5/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-9D	MW-09D-970801	N	8/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-9D	MW-09D-971101	N	11/1/1997	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-9D	MW-09D-980601	N	6/1/1998	--	--	--	--	--	--	--	--	1 U	--	--	--	--	--	--	1 U	--	--	--	--	--	1 U	--	--	--	--	1 U
BDC-MW-9D	MW-09D-981019	N	10/19/1998	1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	--	1 U	1 U	--	--	--	1 U
BDC-MW-9D	MW-09D-990614	N	6/14/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9D	MW-09D-991117	N	11/17/1999	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9D	MW-09D-000605	N	6/5/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9D	MW-09D-001202	N	12/2/2000	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9D	MW-09D-010606	N	6/6/2001	1.12 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.46 U	--	--	--	1 U
BDC-MW-9D	MW-09D-011204	N	12/4/2001	1.1 U	1 U	1 U	1 U	1 U	--	--	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1.5 U	--	--	--	1 U
BDC-MW-9D	MW-09D-020606	N	6/6/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 U
BDC-MW-9D	MW-09D-021204	N	12/4/2002	--	1 U	1 U	5 U	1 U	1 U	1 U	2.0 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2.0 U	--	5 U	1 UJ
BDC-MW-9D	MW-09D-030601	N	6/1/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9D	MW-09D-031117	N	11/17/2003	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-040503	N	5/3/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-041019	N	10/19/2004	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	3 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-050511	N	5/11/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-051114	N	11/14/2005	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-060515	N	5/15/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-061127	N	11/27/2006	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	2.5 U	2.5 U	2.5 U	1 U	2.5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	2.5 U	--	1 U	15 U
BDC-MW-9D	MW-09D-070522	N	5/22/2007	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	DC-MW9D-071129	N	11/29/2007	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	5.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	--	1.0 U	5.0 U
BDC-MW-9D	MW-09D-080519	N	5/19/2008	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.5 U	--	0.2 U	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.5 U	1 U	--	0.2 U	2.5 U
BDC-MW-9D	MW-09D-081124	N	11/24/2008	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-090518	N	5/18/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-9D	MW-09D-091116	N	11/16/2009	1 U	1 U	1 U	1 U	--	1 U	1 U	1 U	5 U	2 U	5 U	1 U	5 U	--	1 U	1 U	--	1 U	1 U	1 U	5 U	1 U	1 U	5 U	5 U	--	1 U	5 U
BDC-MW-E1	E1-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**25**	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940307	N	3/7/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940311	N	3/11/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940316	N	3/16/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940317	N	3/17/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940318	N	3/18/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940420	N	4/20/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940421	N	4/21/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940422	N	4/22/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940525	N	5/25/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940818	N	8/18/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-941107	N	11/7/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-941121	N	11/21/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-941207	N	12/7/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950102	N	1/2/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950130	N	1/30/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950330	N	3/30/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950718	N	7/18/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950719	N	7/19/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950725	N	7/25/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950801	N	8/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950802	N	8/2/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950808	N	8/8/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																						
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-9D	MW-09D-031117	N	11/17/2003	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-040503	N	5/3/2004	1 U	1 U	5 U	5 U	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-041019	N	10/19/2004	1 U	1 U	5 U	**5.2**	50 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-050511	N	5/11/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-051114	N	11/14/2005	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-060515	N	5/15/2006	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-061127	N	11/27/2006	1 U	1 U	5 U	15 U	25 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-070522	N	5/22/2007	1 U	1 U	5 U	5 U	50 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	DC-MW9D-071129	N	11/29/2007	1.0 U	1.0 U	5.0 U	5.0 U	50 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
BDC-MW-9D	MW-09D-080519	N	5/19/2008	0.2 U	0.2 U	2.5 U	3 U	5 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U
BDC-MW-9D	MW-09D-081124	N	11/24/2008	1 U	1 U	5 U	5 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-090518	N	5/18/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-091116	N	11/16/2009	1 U	1 U	5 U	10 U	10 U	5 U	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-E1	E1-930601	N	6/1/1993	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-940307	N	3/7/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**39.78**	--	--	--	--
BDC-MW-E1	MW-E1-940311	N	3/11/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**36.75**	--	--	--	--
BDC-MW-E1	MW-E1-940316	N	3/16/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**48**	--	--	--	--
BDC-MW-E1	MW-E1-940317	N	3/17/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**50**	--	--	--	--
BDC-MW-E1	MW-E1-940318	N	3/18/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**39.78**	--	--	--	--
BDC-MW-E1	MW-E1-940420	N	4/20/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**200**	--	--	--	--
BDC-MW-E1	MW-E1-940421	N	4/21/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**200**	--	--	--	--
BDC-MW-E1	MW-E1-940422	N	4/22/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**230**	--	--	--	--
BDC-MW-E1	MW-E1-940525	N	5/25/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**276.98**	--	--	--	--
BDC-MW-E1	MW-E1-940818	N	8/18/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**167.09**	--	--	--	--
BDC-MW-E1	MW-E1-941107	N	11/7/1994	--	--	--	--	--	--	**17.97**	--	--	--	--	--	--	--	--	--	--	--	--	**195.23**	--	--	--	--
BDC-MW-E1	MW-E1-941121	N	11/21/1994	--	--	--	--	--	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	**170**	--	--	--	--
BDC-MW-E1	MW-E1-941207	N	12/7/1994	--	--	--	--	--	--	**19**	--	--	--	--	--	--	--	--	--	--	--	--	**180**	--	--	--	--
BDC-MW-E1	MW-E1-950102	N	1/2/1995	--	--	--	--	--	--	**24.1**	--	--	--	--	--	--	--	--	--	--	--	--	**219.3**	--	--	--	--
BDC-MW-E1	MW-E1-950130	N	1/30/1995	--	--	--	--	--	--	**20.12**	--	--	--	--	--	--	--	--	--	--	--	--	**209.06**	--	--	--	--
BDC-MW-E1	MW-E1-950330	N	3/30/1995	--	--	--	--	--	--	**10.11**	--	--	--	--	--	--	--	--	--	--	--	--	**141.52**	--	--	--	--
BDC-MW-E1	MW-E1-950718	N	7/18/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**147.85**	--	--	--	--
BDC-MW-E1	MW-E1-950719	N	7/19/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**182.61**	--	--	--	--
BDC-MW-E1	MW-E1-950725	N	7/25/1995	--	--	--	--	--	--	**11.46**	--	--	--	--	--	--	--	--	--	--	--	--	**247.15**	--	--	--	--
BDC-MW-E1	MW-E1-950801	N	8/1/1995	--	--	--	--	--	--	**16.01**	--	--	--	--	--	--	--	--	--	--	--	--	**305.76**	--	--	--	--
BDC-MW-E1	MW-E1-950802	N	8/2/1995	--	--	--	--	--	--	**16.1**	--	--	--	--	--	--	--	--	--	--	--	--	**300.18**	--	--	--	--
BDC-MW-E1	MW-E1-950808	N	8/8/1995	--	--	--	--	--	--	**18.6**	--	--	--	--	--	--	--	--	--	--	--	--	**285.04**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																										
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-9D	MW-09D-031117	N	11/17/2003	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-040503	N	5/3/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-041019	N	10/19/2004	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-050511	N	5/11/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-051114	N	11/14/2005	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-060515	N	5/15/2006	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-061127	N	11/27/2006	--	1 U	1 U	2.5 U	1 U	2 U	1 U	1.5 U	2.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	1 U	--	1 U	1 U
BDC-MW-9D	MW-09D-070522	N	5/22/2007	--	1 U	1 U	5 U	1 U	1 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	DC-MW9D-071129	N	11/29/2007	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	--	--	5.0 U	1.0 U
BDC-MW-9D	MW-09D-080519	N	5/19/2008	--	0.2 U	0.2 U	0.5 U	0.2 U	0.4 U	1 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	0.2 U	1 U	0.2 U	0.2 U	0.2 U	--	1 U	0.2 U
BDC-MW-9D	MW-09D-081124	N	11/24/2008	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-090518	N	5/18/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-9D	MW-09D-091116	N	11/16/2009	--	1 U	1 U	5 U	1 U	2 U	1 U	2 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	1 U	5 U	1 U	1 U	2 U	--	5 U	1 U
BDC-MW-E1	E1-930601	N	6/1/1993	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**4.6**	--	--	--	--	--	**5.0**	--	--	--	--	**18**
BDC-MW-E1	MW-E1-940307	N	3/7/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11.98**	--	--	--	--	--	**11.82**	--	--	--	--	**35.53**
BDC-MW-E1	MW-E1-940311	N	3/11/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**29.28**	--	--	--	--	--	**12.44**	--	--	--	--	**37.92**
BDC-MW-E1	MW-E1-940316	N	3/16/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**61**	--	--	--	--	--	**34**	--	--	--	--	**44**
BDC-MW-E1	MW-E1-940317	N	3/17/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**64**	--	--	--	--	--	**38**	--	--	--	--	**47**
BDC-MW-E1	MW-E1-940318	N	3/18/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**11.98**	--	--	--	--	--	**11.82**	--	--	--	--	**35.53**
BDC-MW-E1	MW-E1-940420	N	4/20/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**160**	--	--	--	--	--	**94**	--	--	--	--	**110**
BDC-MW-E1	MW-E1-940421	N	4/21/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**150**	--	--	--	--	--	**89**	--	--	--	--	**110**
BDC-MW-E1	MW-E1-940422	N	4/22/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**150**	--	--	--	--	--	**91**	--	--	--	--	**140**
BDC-MW-E1	MW-E1-940525	N	5/25/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**278.67**	--	--	--	--	--	**161.85**	--	--	--	--	**142.83**
BDC-MW-E1	MW-E1-940818	N	8/18/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**209.29**	--	--	--	--	--	**111.33**	--	--	--	--	**84.39**
BDC-MW-E1	MW-E1-941107	N	11/7/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**216.05**	--	--	--	--	--	**112.06**	--	--	--	--	**123.89**
BDC-MW-E1	MW-E1-941121	N	11/21/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**180**	--	--	--	--	--	**100**	--	--	--	--	**110**
BDC-MW-E1	MW-E1-941207	N	12/7/1994	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**180**	--	--	--	--	--	**100**	--	--	--	--	**100**
BDC-MW-E1	MW-E1-950102	N	1/2/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**241.52**	--	--	--	--	--	**108.39**	--	--	--	--	**116.21**
BDC-MW-E1	MW-E1-950130	N	1/30/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**220.33**	--	--	--	--	--	**92.9**	--	--	--	--	**110.49**
BDC-MW-E1	MW-E1-950330	N	3/30/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**143.62**	--	--	--	--	--	**67.88**	--	--	--	--	**64.16**
BDC-MW-E1	MW-E1-950718	N	7/18/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**112.48**	--	--	--	--	--	**57.7**	--	--	--	--	**71.93**
BDC-MW-E1	MW-E1-950719	N	7/19/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**141.78**	--	--	--	--	--	**68.4**	--	--	--	--	**82.37**
BDC-MW-E1	MW-E1-950725	N	7/25/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**165.67**	--	--	--	--	--	**84.03**	--	--	--	--	**119.44**
BDC-MW-E1	MW-E1-950801	N	8/1/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**229.04**	--	--	--	--	--	**121.26**	--	--	--	--	**137.25**
BDC-MW-E1	MW-E1-950802	N	8/2/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**242.02**	--	--	--	--	--	**123.37**	--	--	--	--	**133.07**
BDC-MW-E1	MW-E1-950808	N	8/8/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**254.46**	--	--	--	--	--	**124.47**	--	--	--	--	**116.82**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-E1	MW-E1-950809	N	8/9/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950815	N	8/15/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950816	N	8/16/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950829	N	8/29/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950830	N	8/30/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950905	N	9/5/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950906	N	9/6/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950912	N	9/12/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950913	N	9/13/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950919	N	9/19/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950920	N	9/20/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950926	N	9/26/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-950927	N	9/27/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-951003	N	10/3/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-951102	N	11/2/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-951222	N	12/22/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-960103	N	1/3/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-960131	N	1/31/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-980826	N	8/26/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-980923	N	9/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-981104	N	11/4/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-981119	N	11/19/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-981210	N	12/10/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-110127	N	1/27/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-990226	N	2/26/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-990326	N	3/26/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E1	MW-E1-990726	N	7/26/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-960829	N	8/29/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-960925	N	9/25/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-961126	N	11/26/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970107	N	1/7/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970221	N	2/21/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970306	N	3/6/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-E1	MW-E1-950809	N	8/9/1995	--	--	--	--	--	--	**19.34**	--	--	--	--	--	--	--	--	--	--	--	--	**278.59**	--	--	--	--
BDC-MW-E1	MW-E1-950815	N	8/15/1995	--	--	--	--	--	--	**17.29**	--	--	--	--	--	--	--	--	--	--	--	--	**203.35**	--	--	--	--
BDC-MW-E1	MW-E1-950816	N	8/16/1995	--	--	--	--	--	--	**17.83**	--	--	--	--	--	--	--	--	--	--	--	--	**259.26**	--	--	--	--
BDC-MW-E1	MW-E1-950829	N	8/29/1995	--	--	--	--	--	--	**26.33**	--	--	--	--	--	--	--	--	--	--	--	--	**222.16**	--	--	--	--
BDC-MW-E1	MW-E1-950830	N	8/30/1995	--	--	--	--	--	--	**26.64**	--	--	--	--	--	--	--	--	--	--	--	--	**243.99**	--	--	--	--
BDC-MW-E1	MW-E1-950905	N	9/5/1995	--	--	--	--	--	--	**26.19**	--	--	--	--	--	--	--	--	--	--	--	--	**218.8**	--	--	--	--
BDC-MW-E1	MW-E1-950906	N	9/6/1995	--	--	--	--	--	--	**30.09**	--	--	--	--	--	--	--	--	--	--	--	--	**240.2**	--	--	--	--
BDC-MW-E1	MW-E1-950912	N	9/12/1995	--	--	--	--	--	--	**39.09**	--	--	--	--	--	--	--	--	--	--	--	--	**246.59**	--	--	--	--
BDC-MW-E1	MW-E1-950913	N	9/13/1995	--	--	--	--	--	--	**37.91**	--	--	--	--	--	--	--	--	--	--	--	--	**226.75**	--	--	--	--
BDC-MW-E1	MW-E1-950919	N	9/19/1995	--	--	--	--	--	--	**35.76**	--	--	--	--	--	--	--	--	--	--	--	--	**210.51**	--	--	--	--
BDC-MW-E1	MW-E1-950920	N	9/20/1995	--	--	--	--	--	--	**33.97**	--	--	--	--	--	--	--	--	--	--	--	--	**202.83**	--	--	--	--
BDC-MW-E1	MW-E1-950926	N	9/26/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**234.76**	--	--	--	--
BDC-MW-E1	MW-E1-950927	N	9/27/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**262.68**	--	--	--	--
BDC-MW-E1	MW-E1-951003	N	10/3/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**220**	--	--	--	--
BDC-MW-E1	MW-E1-951102	N	11/2/1995	--	--	--	--	--	--	**38.27**	--	--	--	--	--	--	--	--	--	--	--	--	**215.3**	--	--	--	--
BDC-MW-E1	MW-E1-951222	N	12/22/1995	--	--	--	--	--	--	**17.36**	--	--	--	--	--	--	--	--	--	--	--	--	**81.37**	--	--	--	--
BDC-MW-E1	MW-E1-960103	N	1/3/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**81.37**	--	--	--	--
BDC-MW-E1	MW-E1-960131	N	1/31/1996	--	--	--	--	--	--	**33.24**	--	--	--	--	--	--	--	--	--	--	--	--	**226.49**	--	--	--	--
BDC-MW-E1	MW-E1-980826	N	8/26/1998	--	--	--	--	--	--	**10.3**	--	--	--	--	--	--	--	--	--	--	--	--	**56.9**	--	--	--	--
BDC-MW-E1	MW-E1-980923	N	9/23/1998	--	--	--	--	--	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	**50.2**	--	--	--	--
BDC-MW-E1	MW-E1-981104	N	11/4/1998	--	--	--	--	--	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	**46.6**	--	--	--	--
BDC-MW-E1	MW-E1-981119	N	11/19/1998	--	--	--	--	--	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	**54.4**	--	--	--	--
BDC-MW-E1	MW-E1-981210	N	12/10/1998	--	--	--	--	--	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	**110**	--	--	--	--
BDC-MW-E1	MW-E1-110127	N	1/27/1999	--	--	--	--	--	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	**46.4**	--	--	--	--
BDC-MW-E1	MW-E1-990226	N	2/26/1999	--	--	--	--	--	--	**6.3**	--	--	--	--	--	--	--	--	--	--	--	--	**22.2**	--	--	--	--
BDC-MW-E1	MW-E1-990326	N	3/26/1999	--	--	--	--	--	--	**7.74**	--	--	--	--	--	--	--	--	--	--	--	--	**44.2**	--	--	--	--
BDC-MW-E1	MW-E1-990726	N	7/26/1999	--	--	--	--	--	--	**11.96**	--	--	--	--	--	--	--	--	--	--	--	--	**290.46**	--	--	--	--
BDC-MW-E2	MW-E2-960829	N	8/29/1996	--	--	--	--	--	--	**35.1**	--	--	--	--	--	--	--	--	--	--	--	--	**185**	--	--	--	--
BDC-MW-E2	MW-E2-960925	N	9/25/1996	--	--	--	--	--	--	**32.41**	--	--	--	--	--	--	--	--	--	--	--	--	**170**	--	--	--	--
BDC-MW-E2	MW-E2-961126	N	11/26/1996	--	--	--	--	--	--	**16.1**	--	--	--	--	--	--	--	--	--	--	--	--	**113**	--	--	--	--
BDC-MW-E2	MW-E2-970107	N	1/7/1997	--	--	--	--	--	--	**17.2**	--	--	--	--	--	--	--	--	--	--	--	--	**168**	--	--	--	--
BDC-MW-E2	MW-E2-970221	N	2/21/1997	--	--	--	--	--	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	**84.6**	--	--	--	--
BDC-MW-E2	MW-E2-970306	N	3/6/1997	--	--	--	--	--	--	**16.8**	--	--	--	--	--	--	--	--	--	--	--	--	**130**	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-E1	MW-E1-950809	N	8/9/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**270.78**	--	--	--	--	--	**128.47**	--	--	--	--	**112.34**
BDC-MW-E1	MW-E1-950815	N	8/15/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**200.33**	--	--	--	--	--	**104.23**	--	--	--	--	**85.52**
BDC-MW-E1	MW-E1-950816	N	8/16/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**243.81**	--	--	--	--	--	**124.75**	--	--	--	--	**105.96**
BDC-MW-E1	MW-E1-950829	N	8/29/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**241.41**	--	--	--	--	--	**117.44**	--	--	--	--	**122.97**
BDC-MW-E1	MW-E1-950830	N	8/30/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**271.21**	--	--	--	--	--	**130.16**	--	--	--	--	**125.98**
BDC-MW-E1	MW-E1-950905	N	9/5/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**236.84**	--	--	--	--	--	**110.15**	--	--	--	--	**112.78**
BDC-MW-E1	MW-E1-950906	N	9/6/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**284.21**	--	--	--	--	--	**126.96**	--	--	--	--	**134.5**
BDC-MW-E1	MW-E1-950912	N	9/12/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**247.57**	--	--	--	--	--	**125.32**	--	--	--	--	**118.7**
BDC-MW-E1	MW-E1-950913	N	9/13/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**210.53**	--	--	--	--	--	**111.02**	--	--	--	--	**104.67**
BDC-MW-E1	MW-E1-950919	N	9/19/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**207**	--	--	--	--	--	**110.1**	--	--	--	--	**88.68**
BDC-MW-E1	MW-E1-950920	N	9/20/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**187.3**	--	--	--	--	--	**97.66**	--	--	--	--	**80.5**
BDC-MW-E1	MW-E1-950926	N	9/26/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**245.43**	--	--	--	--	--	**126.44**	--	--	--	--	**98.32**
BDC-MW-E1	MW-E1-950927	N	9/27/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**271.5**	--	--	--	--	--	**140.38**	--	--	--	--	**105.01**
BDC-MW-E1	MW-E1-951003	N	10/3/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**180**	--	--	--	--	--	**120**	--	--	--	--	**81**
BDC-MW-E1	MW-E1-951102	N	11/2/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**206.22**	--	--	--	--	--	**112.24**	--	--	--	--	**97.03**
BDC-MW-E1	MW-E1-951222	N	12/22/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**43.26**	--	--	--	--	--	**48.37**	--	--	--	--	**58.58**
BDC-MW-E1	MW-E1-960103	N	1/3/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**43.26**	--	--	--	--	--	**48.37**	--	--	--	--	**58.58**
BDC-MW-E1	MW-E1-960131	N	1/31/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**187.13**	--	--	--	--	--	**116.89**	--	--	--	--	**88.89**
BDC-MW-E1	MW-E1-980826	N	8/26/1998	--	--	--	--	--	--	--	--	**19.3**	--	--	--	--	--	--	**2.9**	--	--	--	--	--	**19.7**	--	--	--	--	**34.7**
BDC-MW-E1	MW-E1-980923	N	9/23/1998	--	--	--	--	--	--	--	--	**14.9**	--	--	--	--	--	--	**30.5**	--	--	--	--	--	**18.8**	--	--	--	--	**36.8**
BDC-MW-E1	MW-E1-981104	N	11/4/1998	--	--	--	--	--	--	--	--	**9.0**	--	--	--	--	--	--	**43**	--	--	--	--	--	**18**	--	--	--	--	**29.8**
BDC-MW-E1	MW-E1-981119	N	11/19/1998	--	--	--	--	--	--	--	--	**25.2**	--	--	--	--	--	--	**52.8**	--	--	--	--	--	**16.2**	--	--	--	--	**30.7**
BDC-MW-E1	MW-E1-981210	N	12/10/1998	--	--	--	--	--	--	--	--	**19.5**	--	--	--	--	--	--	**128**	--	--	--	--	--	**34.6**	--	--	--	--	**41.1**
BDC-MW-E1	MW-E1-110127	N	1/27/1999	--	--	--	--	--	--	--	--	**20.5**	--	--	--	--	--	--	**43.2**	--	--	--	--	--	**14.3**	--	--	--	--	**28.6**
BDC-MW-E1	MW-E1-990226	N	2/26/1999	--	--	--	--	--	--	--	--	**5.6**	--	--	--	--	--	--	**3.8**	--	--	--	--	--	**1.4**	--	--	--	--	**8.5**
BDC-MW-E1	MW-E1-990326	N	3/26/1999	--	--	--	--	--	--	--	--	**10.5**	--	--	--	--	--	--	**29.8**	--	--	--	--	--	**12**	--	--	--	--	**16.8**
BDC-MW-E1	MW-E1-990726	N	7/26/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**201.02**	--	--	--	--	--	**101.97**	--	--	--	--	**132.25**
BDC-MW-E2	MW-E2-960829	N	8/29/1996	--	--	--	--	--	--	--	--	**30**	--	--	--	--	--	--	**181**	--	--	--	--	--	**79**	--	--	--	--	**83.1**
BDC-MW-E2	MW-E2-960925	N	9/25/1996	--	--	--	--	--	--	--	--	**20.85**	--	--	--	--	--	--	**151**	--	--	--	--	--	**61.47**	--	--	--	--	**74.42**
BDC-MW-E2	MW-E2-961126	N	11/26/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**98.8**	--	--	--	--	--	**45.1**	--	--	--	--	**50.2**
BDC-MW-E2	MW-E2-970107	N	1/7/1997	--	--	--	--	--	--	--	--	**17.8**	--	--	--	--	--	--	**121**	--	--	--	--	--	**54.1**	--	--	--	--	**45.1**
BDC-MW-E2	MW-E2-970221	N	2/21/1997	--	--	--	--	--	--	--	--	**3.9**	--	--	--	--	--	--	**64.9**	--	--	--	--	--	**24.2**	--	--	--	--	**33.3**
BDC-MW-E2	MW-E2-970306	N	3/6/1997	--	--	--	--	--	--	--	--	**11.9**	--	--	--	--	--	--	**73.5**	--	--	--	--	--	**32.2**	--	--	--	--	**51.1**

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																											
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-E2	MW-E2-970425	N	4/25/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970512	N	5/12/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970609	N	6/9/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970708	N	7/8/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970811	N	8/11/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970905	N	9/5/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-970926	N	9/26/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-971007	N	10/7/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-971106	N	11/6/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-971112	N	11/12/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-971210	N	12/10/1997	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980122	N	1/22/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980220	N	2/20/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980330	N	3/30/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980429	N	4/29/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980518	N	5/18/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980608	N	6/8/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980706	N	7/6/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-980724	N	7/24/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-990507	N	5/7/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-990518	N	5/18/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-990625	N	6/25/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-990706	N	7/6/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-990817	N	8/17/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-990916	N	9/16/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-991014	N	10/14/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-991116	N	11/16/1999	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-000106	N	1/6/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-000228	N	2/28/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-000328	N	3/28/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-000427	N	4/27/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-000728	N	7/28/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-000830	N	8/30/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BDC-MW-E2	MW-E2-000921	N	9/21/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sump Water	SUMP WATER-890601	N	6/1/1989	--	--	--	--	--	--	**0.6 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**51**	--	--	--	--
TS-1	TS-1-890801	N	8/1/1989	--	--	--	--	--	ND	**0.8 J**	--	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
BDC-MW-E2	MW-E2-970425	N	4/25/1997	--	--	--	--	--	--	**21.1**	--	--	--	--	--	--	--	--	--	--	--	--	**167**	--	--	--	--
BDC-MW-E2	MW-E2-970512	N	5/12/1997	--	--	--	--	--	--	**13.9**	--	--	--	--	--	--	--	--	--	--	--	--	**107**	--	--	--	--
BDC-MW-E2	MW-E2-970609	N	6/9/1997	--	--	--	--	--	--	**15.1**	--	--	--	--	--	--	--	--	--	--	--	--	**139**	--	--	--	--
BDC-MW-E2	MW-E2-970708	N	7/8/1997	--	--	--	--	--	--	**15.4**	--	--	--	--	--	--	--	--	--	--	--	--	**93.6**	--	--	--	--
BDC-MW-E2	MW-E2-970811	N	8/11/1997	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	**98.6**	--	--	--	--
BDC-MW-E2	MW-E2-970905	N	9/5/1997	--	--	--	--	--	--	**10.1**	--	--	--	--	--	--	--	--	--	--	--	--	**136**	--	--	--	--
BDC-MW-E2	MW-E2-970926	N	9/26/1997	--	--	--	--	--	--	**9.2**	--	--	--	--	--	--	--	--	--	--	--	--	**124**	--	--	--	--
BDC-MW-E2	MW-E2-971007	N	10/7/1997	--	--	--	--	--	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	**132**	--	--	--	--
BDC-MW-E2	MW-E2-971106	N	11/6/1997	--	--	--	--	--	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	**112**	--	--	--	--
BDC-MW-E2	MW-E2-971112	N	11/12/1997	--	--	--	--	--	--	**8.2**	--	--	--	--	--	--	--	--	--	--	--	--	**119**	--	--	--	--
BDC-MW-E2	MW-E2-971210	N	12/10/1997	--	--	--	--	--	--	**8.8**	--	--	--	--	--	--	--	--	--	--	--	--	**129**	--	--	--	--
BDC-MW-E2	MW-E2-980122	N	1/22/1998	--	--	--	--	--	--	**7.3**	--	--	--	--	--	--	--	--	--	--	--	--	**145**	--	--	--	--
BDC-MW-E2	MW-E2-980220	N	2/20/1998	--	--	--	--	--	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	**105**	--	--	--	--
BDC-MW-E2	MW-E2-980330	N	3/30/1998	--	--	--	--	--	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	**73.1**	--	--	--	--
BDC-MW-E2	MW-E2-980429	N	4/29/1998	--	--	--	--	--	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	**73**	--	--	--	--
BDC-MW-E2	MW-E2-980518	N	5/18/1998	--	--	--	--	--	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	**65**	--	--	--	--
BDC-MW-E2	MW-E2-980608	N	6/8/1998	--	--	--	--	--	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	**80.1**	--	--	--	--
BDC-MW-E2	MW-E2-980706	N	7/6/1998	--	--	--	--	--	--	**6.9**	--	--	--	--	--	--	--	--	--	--	--	--	**76.6**	--	--	--	--
BDC-MW-E2	MW-E2-980724	N	7/24/1998	--	--	--	--	--	--	**6.0**	--	--	--	--	--	--	--	--	--	--	--	--	**76.5**	--	--	--	--
BDC-MW-E2	MW-E2-990507	N	5/7/1999	--	--	--	--	--	--	**9.2**	--	--	--	--	--	--	--	--	--	--	--	--	**49.2**	--	--	--	--
BDC-MW-E2	MW-E2-990518	N	5/18/1999	--	--	--	--	--	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	**36.3**	--	--	--	--
BDC-MW-E2	MW-E2-990625	N	6/25/1999	--	--	--	--	--	--	**6.0**	--	--	--	--	--	--	--	--	--	--	--	--	**40**	--	--	--	--
BDC-MW-E2	MW-E2-990706	N	7/6/1999	--	--	--	--	--	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	**50.9**	--	--	--	--
BDC-MW-E2	MW-E2-990817	N	8/17/1999	--	--	--	--	--	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	**43.2**	--	--	--	--
BDC-MW-E2	MW-E2-990916	N	9/16/1999	--	--	--	--	--	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	**57.9**	--	--	--	--
BDC-MW-E2	MW-E2-991014	N	10/14/1999	--	--	--	--	--	--	**4.0**	--	--	--	--	--	--	--	--	--	--	--	--	**37.7**	--	--	--	--
BDC-MW-E2	MW-E2-991116	N	11/16/1999	--	--	--	--	--	--	**2.97**	--	--	--	--	--	--	--	--	--	--	--	--	**34.07**	--	--	--	--
BDC-MW-E2	MW-E2-000106	N	1/6/2000	--	--	--	--	--	--	**4.0**	--	--	--	--	--	--	--	--	--	--	--	--	**31.4**	--	--	--	--
BDC-MW-E2	MW-E2-000228	N	2/28/2000	--	--	--	--	--	--	**3.3**	--	--	--	--	--	--	--	--	--	--	--	--	**31**	--	--	--	--
BDC-MW-E2	MW-E2-000328	N	3/28/2000	--	--	--	--	--	--	**3.2**	--	--	--	--	--	--	--	--	--	--	--	--	**33.6**	--	--	--	--
BDC-MW-E2	MW-E2-000427	N	4/27/2000	--	--	--	--	--	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	**20.1**	--	--	--	--
BDC-MW-E2	MW-E2-000728	N	7/28/2000	--	--	--	--	--	--	**3.7**	--	--	--	--	--	--	--	--	--	--	--	--	**51.1**	--	--	--	--
BDC-MW-E2	MW-E2-000830	N	8/30/2000	--	--	--	--	--	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	**35**	--	--	--	--
BDC-MW-E2	MW-E2-000921	N	9/21/2000	--	--	--	--	--	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	**44.5**	--	--	--	--
Sump Water	SUMP WATER-890601	N	6/1/1989	--	--	--	--	--	--	**0.8 J**	--	--	--	--	--	--	--	--	--	--	--	--	**340**	--	--	--	--
TS-1	TS-1-890801	N	8/1/1989	--	--	--	--	--	--	**7.6**	--	--	**1.8 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																								
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BDC-MW-E2	MW-E2-970425	N	4/25/1997	--	--	--	--	--	--	--	--	**18.5**	--	--	--	--	--	--	**79.6**	--	--	--	--	--	**37.8**	--	--	--	--	**81**
BDC-MW-E2	MW-E2-970512	N	5/12/1997	--	--	--	--	--	--	--	--	**15.4**	--	--	--	--	--	--	**63.5**	--	--	--	--	--	**30.1**	--	--	--	--	**53.1**
BDC-MW-E2	MW-E2-970609	N	6/9/1997	--	--	--	--	--	--	--	--	**5.8**	--	--	--	--	--	--	**48.1**	--	--	--	--	--	**26.9**	--	--	--	--	**73.4**
BDC-MW-E2	MW-E2-970708	N	7/8/1997	--	--	--	--	--	--	--	--	**13.9**	--	--	--	--	--	--	**72.3**	--	--	--	--	--	**29.5**	--	--	--	--	**42.2**
BDC-MW-E2	MW-E2-970811	N	8/11/1997	--	--	--	--	--	--	--	--	**18.8**	--	--	--	--	--	--	**93.2**	--	--	--	--	--	**30.2**	--	--	--	--	**61.7**
BDC-MW-E2	MW-E2-970905	N	9/5/1997	--	--	--	--	--	--	--	--	**18.4**	--	--	--	--	--	--	**76.8**	--	--	--	--	--	**54.6**	--	--	--	--	**46.2**
BDC-MW-E2	MW-E2-970926	N	9/26/1997	--	--	--	--	--	--	--	--	**12**	--	--	--	--	--	--	**73.7**	--	--	--	--	--	**38.2**	--	--	--	--	**49.2**
BDC-MW-E2	MW-E2-971007	N	10/7/1997	--	--	--	--	--	--	--	--	**16.4**	--	--	--	--	--	--	**107**	--	--	--	--	--	**45.6**	--	--	--	--	**60**
BDC-MW-E2	MW-E2-971106	N	11/6/1997	--	--	--	--	--	--	--	--	**32.7**	--	--	--	--	--	--	**83.4**	--	--	--	--	--	**38**	--	--	--	--	**51.2**
BDC-MW-E2	MW-E2-971112	N	11/12/1997	--	--	--	--	--	--	--	--	**31.9**	--	--	--	--	--	--	**79.1**	--	--	--	--	--	**40.6**	--	--	--	--	**57.6**
BDC-MW-E2	MW-E2-971210	N	12/10/1997	--	--	--	--	--	--	--	--	**27.8**	--	--	--	--	--	--	**82.5**	--	--	--	--	--	**43.5**	--	--	--	--	**53.6**
BDC-MW-E2	MW-E2-980122	N	1/22/1998	--	--	--	--	--	--	--	--	**5.7**	--	--	--	--	--	--	**92.2**	--	--	--	--	--	**37.6**	--	--	--	--	**64.2**
BDC-MW-E2	MW-E2-980220	N	2/20/1998	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**14.1**	--	--	--	--	--	**13.8**	--	--	--	--	**42.9**
BDC-MW-E2	MW-E2-980330	N	3/30/1998	--	--	--	--	--	--	--	--	**7.9**	--	--	--	--	--	--	**46.4**	--	--	--	--	--	**19.3**	--	--	--	--	**46.9**
BDC-MW-E2	MW-E2-980429	N	4/29/1998	--	--	--	--	--	--	--	--	**13.9**	--	--	--	--	--	--	**65**	--	--	--	--	--	**17.7**	--	--	--	--	**40.9**
BDC-MW-E2	MW-E2-980518	N	5/18/1998	--	--	--	--	--	--	--	--	**13**	--	--	--	--	--	--	**54.4**	--	--	--	--	--	**16.1**	--	--	--	--	**34.8**
BDC-MW-E2	MW-E2-980608	N	6/8/1998	--	--	--	--	--	--	--	--	**14.6**	--	--	--	--	--	--	**68.1**	--	--	--	--	--	**20.9**	--	--	--	--	**49.1**
BDC-MW-E2	MW-E2-980706	N	7/6/1998	--	--	--	--	--	--	--	--	**12.9**	--	--	--	--	--	--	**63**	--	--	--	--	--	**20.7**	--	--	--	--	**56**
BDC-MW-E2	MW-E2-980724	N	7/24/1998	--	--	--	--	--	--	--	--	**10.8**	--	--	--	--	--	--	**55.5**	--	--	--	--	--	**18**	--	--	--	--	**49.5**
BDC-MW-E2	MW-E2-990507	N	5/7/1999	--	--	--	--	--	--	--	--	**25**	--	--	--	--	--	--	**68.4**	--	--	--	--	--	**22.5**	--	--	--	--	**26.6**
BDC-MW-E2	MW-E2-990518	N	5/18/1999	--	--	--	--	--	--	--	--	**23.8**	--	--	--	--	--	--	**51.1**	--	--	--	--	--	**14**	--	--	--	--	**27.7**
BDC-MW-E2	MW-E2-990625	N	6/25/1999	--	--	--	--	--	--	--	--	**13**	--	--	--	--	--	--	**29**	--	--	--	--	--	**11**	--	--	--	--	**36**
BDC-MW-E2	MW-E2-990706	N	7/6/1999	--	--	--	--	--	--	--	--	**14.9**	--	--	--	--	--	--	**38.8**	--	--	--	--	--	**12.7**	--	--	--	--	**35.5**
BDC-MW-E2	MW-E2-990817	N	8/17/1999	--	--	--	--	--	--	--	--	**17.7**	--	--	--	--	--	--	**49.1**	--	--	--	--	--	**19.7**	--	--	--	--	**36.1**
BDC-MW-E2	MW-E2-990916	N	9/16/1999	--	--	--	--	--	--	--	--	**16.3**	--	--	--	--	--	--	**42.1**	--	--	--	--	--	**21.5**	--	--	--	--	**65.99**
BDC-MW-E2	MW-E2-991014	N	10/14/1999	--	--	--	--	--	--	--	--	**7.5**	--	--	--	--	--	--	**40.3**	--	--	--	--	--	**14.1**	--	--	--	--	**31.1**
BDC-MW-E2	MW-E2-991116	N	11/16/1999	--	--	--	--	--	--	--	--	**13.1**	--	--	--	--	--	--	**34.75**	--	--	--	--	--	**11.43**	--	--	--	--	**19.87**
BDC-MW-E2	MW-E2-000106	N	1/6/2000	--	--	--	--	--	--	--	--	**3.3**	--	--	--	--	--	--	**16**	--	--	--	--	--	**6.5**	--	--	--	--	**23.4**
BDC-MW-E2	MW-E2-000228	N	2/28/2000	--	--	--	--	--	--	--	--	**11.3**	--	--	--	--	--	--	**39.8**	--	--	--	--	--	**12**	--	--	--	--	**18.6**
BDC-MW-E2	MW-E2-000328	N	3/28/2000	--	--	--	--	--	--	--	--	**9.8**	--	--	--	--	--	--	**36.8**	--	--	--	--	--	**12.3**	--	--	--	--	**21.8**
BDC-MW-E2	MW-E2-000427	N	4/27/2000	--	--	--	--	--	--	--	--	**4.4**	--	--	--	--	--	--	**14.1**	--	--	--	--	--	**4.8**	--	--	--	--	**17**
BDC-MW-E2	MW-E2-000728	N	7/28/2000	--	--	--	--	--	--	--	--	**2.2**	--	--	--	--	--	--	**13.1**	--	--	--	--	--	**8.0**	--	--	--	--	**108**
BDC-MW-E2	MW-E2-000830	N	8/30/2000	--	--	--	--	--	--	--	--	**22.3**	--	--	--	--	--	--	**48.8**	--	--	--	--	--	**16.6**	--	--	--	--	**19.6**
BDC-MW-E2	MW-E2-000921	N	9/21/2000	--	--	--	--	--	--	--	--	**28.2**	--	--	--	--	--	--	--	--	--	--	--	--	**17.9**	--	--	--	--	**28.5**
Sump Water	SUMP WATER-890601	N	6/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	**7.4**	--	**990**	--	--	**4.7 J**	--	--	**93**	--	--	--	--	--
TS-1	TS-1-890801	N	8/1/1989	--	**3 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	**8.3**	**19**	**20**	--	--	--	**6.3**	--	--	--	--	ND

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																												
				1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1,2-Trichlorotrifluoroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dichloro-1,1,2-Trifluoroethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethene	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone/MEK	2-Chloroethyl vinyl ether	2-Chloronaphthalene	2-Chlorotoluene	2-Hexanone
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
TS-2	TS-2-890801	N	8/1/1989	--	--	--	--	--	ND	ND	--	--	--	--	--	--	--	--	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--
TS-3	TS-3-890801	N	8/1/1989	--	--	--	--	--	ND	**0.3 J**	--	--	--	--	--	--	--	--	--	**130**	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																							
				4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-pentanone (MIBK)	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	BROMOETHANE	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Cyclohexylamine	Dibromochloromethane	Dibromomethane
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L
TS-2	TS-2-890801	N	8/1/1989	--	--	--	--	--	--	**1 J**	--	--	**0.4 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TS-3	TS-3-890801	N	8/1/1989	--	--	--	--	--	--	**0.8 J**	--	--	**0.6 J**	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table D-8
Groundwater Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																									
				Dichlorodifluoromethane	Ethylbenzene	Ethylene Dibromide	Hexachlorobutadiene	Isopropylbenzene	m,p-Xylene	Methyl Iodide	Methylene Chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	trans-1,4-Dichloro-2-butene	Trichloroethene	Trichlorofluoromethane (CFC 11)	Trichlorotrifluoroethane	Undifferentiated Freon	Vinyl Acetate	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
TS-2	TS-2-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**72**	ND	ND	--	--	--	**14**	--	--	--	--	**2.9 J**
TS-3	TS-3-890801	N	8/1/1989	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	**370**	ND	ND	--	--	--	**78**	--	--	--	--	**23**

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Bold text indicates detected analyte

Abbreviations/Acronyms:

-- = not analyzed
µg/L = micrograms per liter
FD = field duplicate
ID = Identification
mg/L = milligrams per liter
N = primary sample
ND = not detected
N/A = not applicable

APPENDIX E

Historical Groundwater Seep Analytical Data Table

Table E-1
Seeps Analytical Results
Boeing Developmental Center
Tukwila, Washington

Analyte	Sample Location, Lab SDG, Sample Date, Sample Type			
	LDW18-SP-24 18F0208 6/13/2018 N	LDW18-SP-24 18F0208 6/13/2018 FD	LDW18-SP-33 18F0208 6/13/2018 N	LDW18-SP-35 18F0208 6/13/2018 N
Semivolatile Organic Compounds (µg/L; SW-846 8270D)				
Phenol	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
Benzyl Alcohol	2.0 U	2.0 U	2.0 U	2.0 U
4-Methylphenol	2.0 U	2.0 U	2.0 U	2.0 U
2,4-Dimethylphenol	3.0 U	3.0 U	3.0 U	3.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
Benzoic Acid	20.0 U	20.0 U	20.0 U	20.0 U
Dimethylphthalate	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran	1.0 U	1.0 U	**0.6 J**	1.0 U
n-Nitrosodiphenylamine	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
Pentachlorophenol	10.0 U	10.0 U	10.0 U	10.0 U
Butylbenzylphthalate	1.0 U	1.0 U	1.0 U	1.0 U
bis(2-Ethylhexyl)phthalate	3.0 U	**0.6 J**	**0.7 J**	3.0 U
Polycyclic Aromatic Hydrocarbons (µg/L; SW-846 8270DD-SIM)				
Naphthalene	0.002 U	**0.006 J**	**0.230**	0.002 U
2-Methylnaphthalene	0.001 U	0.010 U	**0.040**	0.002 U
Acenaphthylene	0.010 U	0.010 U	**0.017**	0.010 U
Acenaphthene	0.010 U	0.010 U	**1.38**	**0.008 J**
Fluorene	0.010 U	**0.019**	**0.732**	0.010 U
Phenanthrene	0.003 U	**0.046**	0.250 U	0.003 U
Anthracene	0.010 U	0.010 U	**0.062**	0.010 U
Fluoranthene	**0.003 J**	**0.007 J**	**0.313**	**0.002 J**
Pyrene	**0.002 J**	**0.002 J**	**0.107**	**0.001 J**
Benzo(a)anthracene	0.010 U	0.010 U	**0.005 J**	0.010 U
Chrysene	**0.0009 J**	0.010 U	**0.005 J**	0.010 U
Benzo(b)fluoranthene	**0.0006 J**	0.010 U	0.010 U	0.010 U
Benzo(k)fluoranthene	0.010 U	0.010 U	0.010 U	0.010 U
Benzo(j)fluoranthene	0.010 U	0.010 U	0.010 U	0.010 U
Benzo(a)pyrene	0.010 U	0.010 U	0.010 U	0.010 U
Indeno(1,2,3-cd)pyrene	0.010 U	0.010 U	0.010 U	0.010 U
Dibenzo(a,h)anthracene	0.010 U	0.010 U	0.010 U	0.010 U
Benzo(g,h,i)perylene	0.010 U	0.010 U	0.010 U	0.010 U
cPAH TEQ	**0.0001 J**	0.010 U	**0.0006 J**	0.010 U

Table E-1
Seeps Analytical Results
Boeing Developmental Center
Tukwila, Washington

Analyte	Sample Location, Lab SDG, Sample Date, Sample Type			
	LDW18-SP-24 18F0208 6/13/2018 N	LDW18-SP-24 18F0208 6/13/2018 FD	LDW18-SP-33 18F0208 6/13/2018 N	LDW18-SP-35 18F0208 6/13/2018 N
Polychlorinated Biphenyls (µg/L; SW-846 8082A)				
Aroclor 1016	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor 1221	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor 1232	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor 1242	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor 1248	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor 1254	0.010 U	0.010 U	0.010 U	0.010 U
Aroclor 1260	0.010 U	0.010 U	0.010 U	0.010 U
Total PCBs	0.010 U	0.010 U	0.010 U	0.010 U
Dissolved Metals (µg/L; SW-846 6020A/7470A)				
Arsenic	**0.510 J**	**0.535 J**	**1.14**	**1.67 J**
Cadmium	0.500 U	0.500 U	0.500 U	0.500 U
Chromium, Total	2.09 U	2.08 U	2.81 U	3.93 U
Copper	1.86 U	2.08 U	2.15 U	5.00 U
Lead	0.500 U	0.500 U	**1.72**	0.500 U
Mercury	0.100 U	0.100 U	0.100 U	0.100 U
Silver	1.00 U	1.00 U	1.00 U	2.00 U
Zinc	4.41 U	4.94 U	4.49 U	**33.5 J**
General Chemistry				
Suspended Solids (mg/L; SM2540 D-97)	**33 J**	**22 J**	**36 J**	**29**
Total Organic Carbon (mg/L; SM 5310 B-00)	**3.61**	**3.65**	**5.79**	**3.33**
Dissolved Organic Carbon (mg/L; SM 5310 B-00)	**2.71**	**2.81**	**3.81**	**1.71**
Dioxins/Furans (pg/L; EPA 1613)				
2,3,7,8-TCDD	0.467 U	0.485 U	--	--
1,2,3,7,8-PeCDD	0.467 U	0.485 U	--	--
1,2,3,4,7,8-HxCDD	0.467 U	0.485 U	--	--
1,2,3,6,7,8-HxCDD	0.467 U	0.485 U	--	--
1,2,3,7,8,9-HxCDD	0.467 U	0.485 U	--	--
1,2,3,4,6,7,8-HpCDD	0.704 U	0.485 U	--	--
OCDD	5.35 U	2.41 U	--	--
2,3,7,8-TCDF	0.467 U	0.485 U	--	--
1,2,3,7,8-PeCDF	0.467 U	0.485 U	--	--
2,3,4,7,8-PeCDF	0.467 U	0.485 U	--	--
1,2,3,4,7,8-HxCDF	0.467 U	0.485 U	--	--
1,2,3,6,7,8-HxCDF	0.467 U	0.485 U	--	--
1,2,3,7,8,9-HxCDF	0.467 U	0.485 U	--	--
2,3,4,6,7,8-HxCDF	0.467 U	0.485 U	--	--
1,2,3,4,6,7,8-HpCDF	0.467 U	0.485 U	--	--
1,2,3,4,7,8,9-HpCDF	0.467 U	0.485 U	--	--
OCDF	0.467 U	0.485 U	--	--
Total Tetra-Dioxins	0.467 U	0.601 U	--	--
Total Penta-Dioxins	0.467 U	0.485 U	--	--
Total Hexa-Dioxins	0.897 U	0.642 U	--	--
Total Hepta-Dioxins	3.15 U	0.920 U	--	--

Table E-1
Seeps Analytical Results
Boeing Developmental Center
Tukwila, Washington

Analyte	Sample Location, Lab SDG, Sample Date, Sample Type			
	LDW18-SP-24 18F0208 6/13/2018 N	LDW18-SP-24 18F0208 6/13/2018 FD	LDW18-SP-33 18F0208 6/13/2018 N	LDW18-SP-35 18F0208 6/13/2018 N
Total Tetra-Furans	0.467 U	0.522 U	--	--
Total Penta-Furans	0.467 U	0.485 U	--	--
Total Hexa-Furans	0.467 U	0.485 U	--	--
Total Hepta-Furans	0.467 U	0.485 U	--	--
Total Dioxin/Furan TEQ (ND = 1/2 RL)	0.740 U EMPC	0.767 U EMPC	--	--

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
Bold text indicates detected analyte
-- = not analyzed

Abbreviations/Acronyms:

cPAH = carcinogenic polycyclic aromatic hydrocarbon
EMPC = estimated maximum possible concentration
EPA = US Environmental Protection Agency
FD = field duplicate
Lab = laboratory
µg/L = micrograms per liter
mg/L = milligrams per liter
N = primary sample
ND = not detected
PCBs = polychlorinated biphenyls
pg/L = picograms per liter
RL = reporting limit
SDG = sample delivery group
SIM = selected ion monitoring
SM = Standard Methods
TEQ = toxicity equivalency quotient

APPENDIX F

Historical Soil Analytical Data Tables

- Table F-1. Soil General Chemistry Analytical Results
- Table F-2. Soil Metals Analytical Results
- Table F-3.Soil Poly Chlorinated Biphenyl Analytical Results
- Table F-4. Soil Semivolatile Organic Compound Analytical Results
- Table F-5. Soil Petroleum Hydrocarbon Analytical Results
- Table F-6. Soil Volatile Organic Compound Analytical Results

Table F-1
Soil General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement	
				pH	Total Organic Carbon
				N/A	N/A
				SU	mg/kg
SWMU-20					
BDC-MW-6C	6C-10.5	N	8/1/1989	**8.61**	--
BDC-MW-6C	6C-12.0	N	8/1/1989	**8.49**	--
BDC-MW-6C	6C-13.5	N	8/1/1989	**8.46**	--
BDC-MW-6C	6C-15.0	N	8/1/1989	**8.52**	--
BDC-MW-7C	7C-10.5	N	8/1/1989	**7.46**	--
BDC-MW-7C	7C-12.5	N	8/1/1989	**7.53**	--
BDC-MW-7C	7C-15.0	N	8/1/1989	**7.53**	--
BDC-MW-8C	8C-12.0	N	8/1/1989	**8.30**	--
BDC-MW-8C	8C-15.5	N	8/1/1989	**8.40**	--
BDC-MW-8C	8C-17.0	N	8/1/1989	**8.50**	--
BDC-MW-9D	9D-11.0	N	8/1/1989	**8.11**	--
BDC-MW-9D	9D-12.5	N	8/1/1989	**8.33**	--
BDC-MW-9D	9D-15.5	N	8/1/1989	**8.09**	--
BDC-MW-10C	10C-12.0	N	8/1/1989	**7.40**	--
BDC-MW-10C	10C-15.0	N	8/1/1989	**7.40**	--
BDC-MW-10C	10C-15.0-DUP	FD	8/1/1989	**7.40**	--
BDC-MW-10C	10C-3.0	N	8/1/1989	**8.10**	--
BDC-MW-11A	11A-11.0	N	8/1/1989	**8.50**	--
BDC-MW-11A	11A-12.5	N	8/1/1989	**8.60**	--
BDC-MW-12A	12A-12.0	N	8/1/1989	**8.28**	--
BDC-MW-12A	12A-13.5	N	8/1/1989	**8.03**	--
BDC-MW-13C	13C-11.0	N	8/1/1989	**7.84**	--
BDC-MW-13C	13C-12.5	N	8/1/1989	**7.47**	--
BDC-MW-14C	14C-12.5	N	8/1/1989	**8.30**	--
BDC-MW-14C	14C-27.5	N	8/1/1989	**8.00**	--
BDC-MW-14E	MW-14E (30.0)	N	1/1/1991	--	**1456**
BDC-MW-15D	15D-11.0	N	8/1/1989	**8.25**	--
BDC-MW-15D	15D-30.0	N	8/1/1989	**8.22**	--
BDC-MW-15D	15D-36.0	N	8/1/1989	**8.59**	--
BDC-MW-15D	15D-45.0	N	8/1/1989	**8.45**	--
BDC-MW-15D	15D-5.0	N	8/1/1989	**8.24**	--
BDC-MW-15D	15D-50.0	N	8/1/1989	**8.55**	--
BDC-MW-15D	15D-50.0-DUP	FD	8/1/1989	**8.70**	--
BDC-MW-15D	15D-55.0	N	8/1/1989	**8.60**	--
BDC-MW-16C	16C-13.5	N	8/1/1989	**8.59**	--

Table F-1
Soil General Chemistry Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement: pH	Analyte, Fraction Analyzed, Unit of Measurement: Total Organic Carbon
				N/A	N/A
				SU	mg/kg
BDC-MW-16C	16C-18.0	N	8/1/1989	**8.27**	--
BDC-MW-16C	16C-18.0-DUP	FD	8/1/1989	**8.57**	--
BDC-MW-17D	MW-17D (22.5)	N	1/1/1991	--	**760**
BDC-MW-18D	MW-18D (17.5)	N	1/1/1991	--	**440**
BDC-MW-18D	MW-18D (37.5)	N	1/1/1991	--	**247**
BDC-MW-20D	MW-20D (20.0)	N	1/1/1991	--	**357**
Tub Skid 1	TUB SKID 1	N	8/1/1989	**8.47**	--
Tub Skid 2	TUB SKID 2	N	8/1/1989	**8.59**	--
Tub Skid 3	TUB SKID 3	N	8/1/1989	**8.64**	--

Notes:

Bold text indicates detected analyte

Abbreviations and Acronyms:

-- = not analyzed
FD = field duplicate
ID = Identification
mg/kg = milligrams per kilogram
N = primary sample
N/A = not applicable
SU = standard units

Table F-2
Soil Metals Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement																		
				Antimony, T	Arsenic, T	Barium, T	Beryllium, T	Cadmium, T	Chromium, Total, T	Cobalt, T	Copper, T	Cyanide, T	Lead, T	Mercury, T	Molybdenum, T	Nickel, T	Selenium, T	Silver, T	Strontium, T	Thallium, T	Vanadium, T	Zinc, T
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SWMU-17																						
BDC-05-02	BDC-05-02-860601	N	6/1/1986	--	**2.8**	--	**0.5**	--	**11**	--	**41**	--	**1.2**	--	--	**9.0**	--	**0.4**	--	--	--	**36**
SWMU-20																						
Bldg 9-101-1	1-12.0	N	8/1/1989	0.5 U	**3.2**	**44**	**0.1**	0.5 U	**14**	**5.0**	**16**	0.5 UJ	5.0 U	0.1 U	5.0 U	**8.0**	0.5 U	1.0 UJ	**68**	0.5 U	**44**	**32**
Bldg 9-101-2	2-14.0	N	6/1/1989	0.5 U	**2.7**	**37**	**0.1**	0.5 U	**14**	**5.0**	**10**	0.5 UJ	5.0 U	0.1 U	5.0 U	**6.0**	0.5 U	1.0 UJ	**42**	0.5 U	**42**	**34**
Bldg 9-101-2	2-15.5	N	6/1/1989	0.5 U	**3.0**	**48**	**0.2**	**0.5**	**16**	**5.0**	**17**	0.5 UJ	5.0 U	0.1 U	5.0 U	**8.0**	0.5 U	1.0 UJ	**56**	0.5 U	**50**	**31**
Bldg 9-101-4	4-11.5	N	6/1/1989	0.5 U	**7.8**	**53**	**0.3**	0.5 U	**15**	**4.0**	**21**	--	5.0 U	0.1 U	5.0 U	**6.0**	0.5 U	1.0 UJ	**83**	0.5 U	**64**	**32**
Bldg 9-101-5	5-12.5	N	6/1/1989	0.5 U	**4.1**	**54**	**0.3**	**0.7**	**16**	**6.0**	**16**	0.5 UJ	5.0 U	0.1 U	5.0 U	**11**	0.5 U	1.0 UJ	**58**	0.5 U	**54**	**38**
Test Pit 1,2,4 Comp	TEST PITS 1,2,4 COMPOSITE (CAPILLARY)	N	6/1/1989	5 U	**3.7**	**60**	**0.3**	0.5 U	**37**	**10**	**16**	0.5 UJ	5 U	0.1 U	5 U	**46**	0.5 U	1 UJ	**46**	0.5 U	**54**	**43**
Test Pit 1,2,4 Comp	TEST PITS 1,2,4 COMPOSITE (DRY)	N	6/1/1989	5 U	**3.3**	**64**	**0.3**	0.5 U	**34**	**7**	**17**	0.5 UJ	5 U	0.1 U	5 U	**42**	0.5 U	1 UJ	**46**	0.5 U	**44**	**42**
Test Pit 1,2,4 Comp	TEST PITS 1,2,4 COMPOSITE (SATURATED)	N	6/1/1989	5 U	**3.6**	**110**	**0.3**	0.7	**35**	**8**	**18**	0.5 UJ	7	0.1 U	5 U	**40**	0.5 U	1 UJ	**33**	0.5 U	**49**	**49**
Museum of Flight																						
B-1	B-1-8	N	1/4/2001	--	**4.5**	--	--	0.2 U	**4.4**	--	**22**	--	**3.0**	0.02 U	--	**8.1**	--	--	--	--	--	**26**
B-2	B-2-10	N	1/4/2001	--	**5.6**	--	--	0.2 U	**8.8**	--	**23**	--	**4.0**	0.02 U	--	**12**	--	--	--	--	--	**18**
B-3	B-3-12	N	1/4/2001	--	**7.8**	--	--	0.1 U	**11**	--	**20**	--	**5.0**	**0.31**	--	**14**	--	--	--	--	--	**30**
B-4	B-4-2	N	1/4/2001	--	**4.4**	--	--	0.2 U	**6.0**	--	**13**	--	**3.0**	**0.02**	--	**7.8**	--	--	--	--	--	**14**
B-5	B-5-10	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	B-6-2	N	1/4/2001	--	**7.0**	--	--	0.3 U	**13**	--	**27**	--	**31.0**	**0.10**	--	**15**	--	--	--	--	--	**97**
B-6	B-6-10	N	1/4/2001	--	**6.4**	--	--	0.2 U	**13**	--	**25**	--	**6.0**	**0.05**	--	**7.2**	--	--	--	--	--	**13**
B-7	B-7-2	N	1/4/2001	--	**3.3**	--	--	0.1 U	**5.5**	--	**9.0**	--	**3.0**	0.02 U	--	**7.8**	--	--	--	--	--	**18**
B-7	B-7-8	N	1/4/2001	--	**2.5**	--	--	0.2 U	**5.7**	--	**8.9**	--	**2.0**	0.02 U	--	**8.4**	--	--	--	--	--	**18**
B-8	B-8-2	N	1/4/2001	--	**2.0**	--	--	0.1 U	**6.0**	--	**16**	--	**6.0**	0.02 U	--	**7.3**	--	--	--	--	--	**30**
B-8	B-8-10	N	1/4/2001	--	**3.3**	--	--	0.1 U	**7.1**	--	**12**	--	**3.0**	**0.02**	--	**8.8**	--	--	--	--	--	**18**
B-9	B-9-8	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-9	B-9-12	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10	B-10-14	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10	B-10-16	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Bold text indicates detected analyte

Abbreviations and Acronyms:

-- = not analyzed
ID = Identification
mg/kg = milligrams per kilogram
N = primary sample
T = total fraction

Table F-3
Soil Polychlorinated Biphenyl Analytical Results
Boeing Developmental Center
Tukwila, Washington

Sample Location	Sample ID	Sample Type	Sample Date	Analyte, Fraction Analyzed, Unit of Measurement: Total PCBs; N/A; µg/kg
SWMU-20				
BDC-MW-6C	6C-10.5	N	8/1/1989	20 U
BDC-MW-6C	6C-12.0	N	8/1/1989	20 U
Museum of Flight				
J28-5	J28-5-3	N	3/6/1987	1000 U
J28-10	J28-10-2	N	3/6/1987	1000 U

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

Bold text indicates detected analyte

Abbreviations and Acronyms:

-- = not analyzed
µg/kg = micrograms per kilogram
ID = identification
N = primary sample
N/A = not applicable
PCBs = polychlorinated biphenyls

Table F-4
Soil Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																				
				1,2,4-Trichlorobenzene	2,4-Dimethylphenol	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene & Benzo(k)fluoranthene	Benzo(g,h,i)perylene	bis(2-Ethylhexyl) Phthalate	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Dimethyl Phthalate	Di-n-octyl Phthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
SWMU-20																								
BDC-MW-6C	6C-10.5	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	**56 J**	ND	ND	ND	--	**33 J**	ND	ND	ND	ND	ND	ND
BDC-MW-6C	6C-12.0	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	**29 J**	ND	ND	ND	--	**31 J**	ND	ND	ND	ND	ND	ND
BDC-MW-6C	6C-15.0	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	**29 J**	ND	ND	ND	--	**32 J**	ND	ND	ND	ND	ND	ND
BDC-MW-7C	7C-12.0	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	--	**120 J**	ND	ND	ND	ND	ND	ND
BDC-MW-8C	8C-12.0	N	8/1/1989	--	ND	ND	**820**	**1100**	**360**	**100 J**	**300 J**	**30 J**	ND	**420**	**22 J**	**800**	--	**55 J**	**3100**	**1000**	**44 J**	ND	**370**	**1600**
BDC-MW-8C	8C-15.5	N	8/1/1989	--	ND	ND	**73 J**	**75 J**	ND	ND	ND	ND	**63 J**	ND	ND	**63 J**	--	**170 J**	**170 J**	**110 J**	ND	ND	**21 J**	**110 J**
BDC-MW-8C	8C-17.0	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	**57 J**	**34 J**	**24 J**	ND	ND	ND	**22 J**
BDC-MW-12A	12A-12.0	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	**51 J**	ND	ND	ND	ND	ND	ND
BDC-MW-12A	12A-13.5	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	**30 J**	ND	ND	ND	ND	ND	ND
BDC-MW-15C	15C-36.0	N	8/1/1989	--	**310 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND
BDC-MW-15C	15C-55.0	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	**150 J**	ND	ND	ND	ND	ND	ND
BDC-MW-16C	16C-18.0-DUP	FD	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	**38 J**	ND	ND	ND	ND	ND	ND
Bldg 9-101-1	1-12.0	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	**49 J**	ND	ND	ND	--	ND	ND	ND	ND	**330**	ND	ND
Bldg 9-101-2	2-14.0 A	N	8/1/1989	--	ND	ND	ND	ND	ND	ND	ND	ND	**220 J**	ND	ND	ND	--	ND	**48 J**	ND	ND	ND	ND	**40 J**
Bldg 9-101-2	2-15.5 A	N	8/1/1989	--	ND	**8700**	**9000**	**4400**	**1300**	ND	**660**	ND	ND	**1100**	ND	**7900**	--	ND	**8900**	**9400**	ND	**15000**	**23000**	**5400**
Test Pit 1,2,4 Comp	TEST PITS 1,2,4 COMPOSITE (SATURATED)	N	6/1/1989	--	--	--	--	--	--	--	--	--	**53 J**	--	--	--	**120 J**	--	--	--	--	--	--	--
Tub Skid 1	TUB SKID 1	N	8/1/1989	--	--	**350**	**1300**	**810**	**250 J**	--	**180 J**	--	**76 J**	**300 J**	--	**1300**	--	--	**2200**	**1400**	--	**1800**	**4000**	**1400**
Tub Skid 3	TUB SKID 3	N	8/1/1989	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**68 J**	--	--	--	**53 J**	**68 J**

Table F-4
Soil Semivolatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																				
				1,2,4-Trichlorobenzene	2,4-Dimethylphenol	2-Methylnaphthalene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene & Benzo(k)fluoranthene	Benzo(g,h,i)perylene	bis(2-Ethylhexyl) Phthalate	Chrysene	Dibenzo(a,h)anthracene	Dibenzofuran	Dimethyl Phthalate	Di-n-octyl Phthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Museum of Flight																								
B-1	B-1-8	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-2	B-2-10	N	1/4/2001	--	--	--	--	--	**13**	**10**	**19**	--	--	**15**	**3**	--	--	--	--	--	**7**	--	--	--
B-3	B-3-12	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-4	B-4-2	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-5	B-5-10	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	B-6-2	N	1/4/2001	--	--	--	--	--	**10**	**10**	**16**	--	--	**10**	**2**	--	--	--	--	--	**7**	--	--	--
B-6	B-6-10	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-7	B-7-2	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-7	B-7-8	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-8	B-8-2	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-8	B-8-10	N	1/4/2001	--	--	--	--	--	2 U	2 U	2 U	--	--	2 U	2 U	--	--	--	--	--	2 U	--	--	--
B-9	B-9-8	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-9	B-9-12	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10	B-10-14	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-10	B-10-16	N	1/4/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
Bold text indicates detected analyte

Abbreviations and Acronyms:

-- = not analyzed
µg/kg = micrograms per kilogram
ID = Identification
FD = field duplicate
N = primary sample
N/A = not applicable

Table F-5
Soil Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement		
				TPH-D	TPH-O	Total Petroleum Hydrocarbons
				N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/kg	mg/kg	mg/kg
AOC-01/02						
SLABSW	13&14SLABSW	N	7/12/1990	--	--	10 U
SLABW	15&16SLABW	N	7/12/1990	--	--	10 U
SLABNW	17&18SLABNW	N	7/12/1990	--	--	10 U
3DNS	3DNS	N	7/26/1990	--	--	10 U
3GES	3GES	N	10/23/1990	--	--	10 U
3GNS	3GNS	N	10/23/1990	--	--	10 U
3GSS	3GSS	N	10/23/1990	--	--	10 U
BE	BE	N	10/23/1990	--	--	10 U
BNE	BNE	N	10/23/1990	--	--	10 U
BSE	BSE	N	10/23/1990	--	--	10 U
DG952W	DC952-W	N	10/30/1990	--	--	20 U
AOC-03/04						
BS-E-1	BS-E-1	N	8/10/1992	--	--	**13**
BS-E-2	BS-E-2	N	8/10/1992	--	--	13 U
BS-W-1	BS-W-1	N	8/10/1992	--	--	**120000**
BS-W-2	BS-W-2	N	8/13/1992	--	--	14 U
BS-W-3	BS-W-3	N	8/13/1992	--	--	**13000**
BS-W-4	BS-W-4	N	8/13/1992	--	--	**18**
BS-W-5	BS-W-5	N	8/25/1992	--	--	**12000**
BS-W-6	BS-W-6	N	8/25/1992	--	--	**6200**
DC-9-50-21A	21A-11.5	N	10/14/1992	--	--	13 U
DC-9-50-21A	21A-16	N	10/14/1992	--	--	**17**
SW-E-31	SW-E-31	N	8/10/1992	--	--	**75**
SW-E-5	SW-E-5	N	8/10/1992	--	--	**29**
SW-N-16	SW-N-16	N	8/10/1992	--	--	**65**
SW-N-3	SW-N-3	N	8/10/1992	--	--	**16**
SW-S-24	SW-S-24	N	8/10/1992	--	--	11 U
SW-S-5	SW-S-5	N	8/10/1992	--	--	**36**
SW-W-25	SW-W-25	N	8/10/1992	--	--	**42**
SW-W-9	SW-W-9	N	8/10/1992	--	--	**20**
TS-1	TS-1	N	8/18/1992	--	--	12 U
TS-2	TS-2	N	8/18/1992	--	--	**130**

Table F-5
Soil Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement		
				TPH-D	TPH-O	Total Petroleum Hydrocarbons
				N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/kg	mg/kg	mg/kg
SWMU-20						
BDC-MW-6C	6C-10.5	N	8/1/1989	--	--	10 U
BDC-MW-6C	6C-12.0	N	8/1/1989	--	--	10 U
BDC-MW-6C	6C-13.5	N	8/1/1989	--	--	10 U
BDC-MW-7C	7C-10.5	N	8/1/1989	--	--	10 U
BDC-MW-7C	7C-12.0	N	8/1/1989	--	--	10 U
BDC-MW-8C	8C-12.0	N	8/1/1989	--	--	**163**
BDC-MW-8C	8C-15.5	N	8/1/1989	--	--	**26**
BDC-MW-8C	8C-17.0	N	8/1/1989	--	--	**26**
BDC-MW-9D	9D-11.0	N	8/1/1989	--	--	10 U
BDC-MW-9D	9D-12.5	N	8/1/1989	--	--	10 U
9C	9C (PHASE II WATER MAIN SOIL)	N	8/1/1989	--	--	1 U
BDC-MW-15C	15C-11.0	N	8/1/1989	--	--	10 U
BDC-MW-15C	15C-5	N	8/1/1989	--	--	**22**
Bldg 9-101-1	1-10.5	N	8/1/1989	--	--	**22**
Bldg 9-101-2	2-15.0	N	8/1/1989	--	--	**160**
Bldg 9-101-3	3-10.0	N	8/1/1989	--	--	20 U
P1-1	P1-1 (PHASE I TUB SKID SOILS)	N	8/1/1989	--	--	**35**
P1-2	P1-2 (PHASE I TUB SKID SOILS)	N	8/1/1989	--	--	10 U
P1-3	P1-3 (PHASE I TUB SKID SOILS)	N	8/1/1989	--	--	14
Museum of Flight						
B-1	B-1-8	N	1/4/2001	25 U	50 U	--
B-2	B-2-10	N	1/4/2001	25 U	**91**	--
B-3	B-3-12	N	1/4/2001	25 U	50 U	--
B-4	B-4-2	N	1/4/2001	--	--	--
B-5	B-5-10	N	1/4/2001	25 U	50 U	--
B-6	B-6-2	N	1/4/2001	25 U	50 U	**--**
B-6	B-6-10	N	1/4/2001	25 U	50 U	**--**
B-7	B-7-2	N	1/4/2001	25 U	50 U	**--**
B-7	B-7-8	N	1/4/2001	25 U	50 U	--

Table F-5
Soil Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement		
				TPH-D	TPH-O	Total Petroleum Hydrocarbons
				N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/kg	mg/kg	mg/kg
B-8	B-8-2	N	1/4/2001	25 U	50 U	--
B-8	B-8-10	N	1/4/2001	25 U	50 U	--
B-9	B-9-8	N	1/4/2001	25 U	50 U	--
B-9	B-9-12	N	1/4/2001	25 U	**490**	**--**
B-10	B-10-14	N	1/4/2001	25 U	50 U	**--**
B-10	B-10-16	N	1/4/2001	25 U	50 U	**--**
Fuel Tank - East Wall	DM-1	N	7/5/1989	--	--	**160**
Fuel Tank - South Wall	DM-2	N	7/5/1989	--	--	20 U
Fuel Tank - West Wall	DM-3	N	7/5/1989	--	--	20 U
Fuel Tank - North Wall	DM-4	N	7/5/1989	--	--	20 U
Fuel Tank - Bottom (East)	DM-5	N	7/5/1989	--	--	**880**
Fuel Tank Excavation Stockpile	DM-6	N	7/5/1989	--	--	**57**
Pump Island - North Wall	DM-7	N	7/6/1989	--	--	20 U
Pump Island - East Wall	DM-8	N	7/6/1989	--	--	20 U
Pump Island - South Wall	DM-9	N	7/6/1989	--	--	20 U
Pump Island - West Wall	DM-10	N	7/6/1989	--	--	20 U
Pump Island - Bottom	DM-11	N	7/6/1989	--	--	20 U
Oil/Water Sep - North Wall	DM-12	N	7/6/1989	--	--	20 U
Oil/Water Sep - South Wall	DM-13	N	7/6/1989	--	--	**66**
Oil/Water Sep - West Wall	DM-14	N	7/6/1989	--	--	**47**
Oil/Water Sep - East Wall	DM-15	N	7/6/1989	--	--	20 U
Oil/Water Sep - Bottom	DM-16	N	7/6/1989	--	--	20 U
Fuel System Piping - Bottom	DM-17	N	7/6/1989	--	--	20 U
Fuel System Vent Line - Bottom	DM-18	N	7/7/1989	--	--	**42**
Pump Island - Below Pump	DM-19	N	7/7/1989	--	--	20 U
Fuel Tank - Bottom (East)	DM2-5	N	7/7/1989	--	--	**83**
Fuel Tank - Bottom (West)	DM3-5	N	7/7/1989	--	--	**76**
Fuel Tank - Bottom (Center)	DM4-5	N	7/7/1989	--	--	--
Fuel Tank Excavation Stockpile	DM-ST	N	7/11/1989	--	--	**75**
Oil/Water Sep Stockpile	DM-OW	N	7/11/1989	--	--	**20**
Pump Island Excavation Stockpile #1	DM-PI1	N	7/11/1989	--	--	**120**
Pump Island Excavation Stockpile #2	DM-PI2	N	7/11/1989	--	--	**1300**
Pump Island Excavation Stockpile #3	DM-PI3	N	7/11/1989	--	--	**540**
Pump Island Excavation - North Wall	DM1	N	7/11/1989	--	--	--
Pump Island Excavation - Bottom	DM6	N	7/11/1989	--	--	--

Table F-5
Soil Petroleum Hydrocarbon Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement		
				TPH-D	TPH-O	Total Petroleum Hydrocarbons
				N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	mg/kg	mg/kg	mg/kg
J28-1	J28-1-4	N	3/6/1987	50 U	--	**--**
J28-2	J28-2-4	N	3/6/1987	**100**	--	**--**
J28-5	J28-5-3	N	3/6/1987	**2500**	--	**--**
J28-9	J28-9-2	N	3/6/1987	50 U	--	**--**
J28-10	J28-10-2	N	3/6/1987	**2500**	--	**--**

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
Bold text indicates detected analyte

Abbreviations and Acronyms:

ID = Identification
mg/kg = milligrams per kilogram
N = primary sample
N/A = not applicable

Table F-6
Soil Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																	
				1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethene	2-Butanone/MEK	Acetone	Benzene	Carbon Disulfide	cis-1,2-Dichloroethene	Ethylbenzene	Methylene Chloride	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
AOC-01/02																					
SLABNW	17&18SLABNW	N	7/12/1990	--	--	--	--	--	--	--	60 U	--	--	60 U	--	--	60 U	120 U	--	--	--
SLABSW	13&14SLABSW	N	7/12/1990	--	--	--	--	--	--	--	66 U	--	--	66 U	--	--	66 U	**380**	**--**	--	--
SLABW	15&16SLABW	N	7/12/1990	--	--	--	--	--	--	--	65 U	--	--	65 U	--	--	65 U	130 U	--	--	--
3DNS	3DNS	N	7/26/1990	--	--	--	--	--	--	--	57 U	--	--	57 U	--	--	57 U	110 U	--	--	--
3GES	3GES	N	10/23/1990	--	--	--	--	--	--	--	53 U	--	--	53 U	--	--	53 U	110 U	--	--	--
3GNS	3GNS	N	10/23/1990	--	--	--	--	--	--	--	53 U	--	--	53 U	--	--	53 U	110 U	--	--	--
3GSS	3GSS	N	10/23/1990	--	--	--	--	--	--	--	54 U	--	--	54 U	--	--	54 U	110 U	--	--	--
BE	BE	N	10/23/1990	--	--	--	--	--	--	--	270 U	--	--	270 U	--	--	270 U	540 U	--	--	--
BNE	BNE	N	10/23/1990	--	--	--	--	--	--	--	260 U	--	--	260 U	--	--	260 U	530 U	--	--	--
BSE	BSE	N	10/23/1990	--	--	--	--	--	--	--	68 U	--	--	68 U	--	--	68 U	140 U	--	--	--
DG952W	DG952-W	N	10/30/1990	--	--	--	--	--	--	--	**22**	--	--	4 U	--	--	**20**	**32**	**--**	--	--
DWS	12DWS	N	6/29/1990	--	--	--	--	--	--	--	53 U	--	--	53 U	--	--	53 U	110 U	--	--	--
DSS	14DSS	N	6/29/1990	--	--	--	--	--	--	--	55 U	--	--	55 U	--	--	55 U	110 U	--	--	--
SWMU-17																					
BDC-05-02	BDC-05-02-860601	N	6/1/1986	--	--	--	--	--	--	**460**	--	--	--	--	**5 J**	--	**5 J**	**5 J**	**--**	--	--
SWMU-20																					
BDC-MW-6C	6C-10.5	N	8/1/1989	ND	ND	--	ND	**35**	ND	**2.3 J**	ND	ND	--	ND	ND	**790**	ND	ND	--	**130**	ND
BDC-MW-6C	6C-12.0	N	8/1/1989	ND	ND	--	ND	**710**	ND	ND	ND	ND	--	ND	ND	**10000**	ND	ND	--	**1300**	ND
BDC-MW-6C	6C-13.5	N	8/1/1989	ND	ND	--	ND	**81**	ND	ND	ND	ND	--	ND	ND	**450**	ND	ND	--	**100**	ND
BDC-MW-6C	6C-15.0	N	8/1/1989	ND	ND	--	ND	**71**	ND	**13 J**	ND	ND	--	ND	ND	**280**	ND	ND	--	**74**	ND
BDC-MW-6C	6C-33.5	N	8/1/1989	ND	ND	--	ND	**24**	**3.6 J**	**10**	ND	**0.7 J**	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-6C	6C-35.0	N	8/1/1989	ND	ND	--	ND	**18**	**2.9 J**	**5.7 J**	**0.5 J**	ND	--	ND	ND	ND	ND	ND	--	**0.8 J**	**19**
BDC-MW-6C	6C-39.0	N	8/1/1989	ND	ND	--	**2.9 J**	**1300**	**2.8 J**	**5.3 J**	ND	ND	--	ND	ND	ND	ND	ND	--	**0.9 J**	ND
BDC-MW-7C	7C-10.5	N	8/1/1989	ND	ND	--	ND	**2.3 J**	**1.6 J**	ND	ND	ND	--	ND	ND	**27**	ND	ND	--	**3.5 J**	ND
BDC-MW-7C	7C-12.0	N	8/1/1989	ND	ND	--	ND	**350**	ND	ND	ND	ND	--	ND	ND	**1300**	ND	ND	--	**320**	ND
BDC-MW-7C	7C-15.0	N	8/1/1989	ND	ND	--	**0.8 J**	**120**	ND	**3.9 J**	**0.6 J**	ND	--	ND	ND	**18**	ND	ND	--	**21**	**40**
BDC-MW-7C	7C-35.0	N	8/1/1989	ND	ND	--	ND	**2300**	ND	**47**	ND	ND	--	ND	ND	**550**	ND	ND	--	**830**	**690**
BDC-MW-7C	7C-39.0	N	8/1/1989	ND	ND	--	ND	**47**	**6.5 J**	**18**	ND	**1.5 J**	--	**0.4 J**	ND	**110**	ND	**1.1 J**	**--**	**110**	**26**
BDC-MW-8C	8C-12.0	N	8/1/1989	ND	ND	--	**4.8 J**	**520**	**3.2 J**	**16**	ND	ND	--	ND	ND	**2100**	ND	ND	--	**680**	**30**
BDC-MW-8C	8C-15.5	N	8/1/1989	ND	ND	--	ND	**5500**	ND	ND	ND	ND	--	ND	ND	**8700**	ND	ND	--	**9900**	ND
BDC-MW-8C	8C-17.0	N	8/1/1989	ND	ND	--	ND	**670**	ND	**23 J**	ND	ND	--	ND	ND	**5300**	ND	ND	--	**2000**	**38**
BDC-MW-8C	8C-22.5	N	8/1/1989	ND	ND	--	ND	**1.9 J**	ND	**4.2 J**	ND	ND	--	ND	ND	**2.2 J**	ND	ND	--	**1.6 J**	ND
BDC-MW-8C	8C-32.5	N	8/1/1989	ND	ND	--	**2.7 J**	**1900**	**2.2 J**	**11**	ND	**7.4**	--	ND	ND	**17000**	ND	ND	--	**6200**	**57**
BDC-MW-8C	8C-40.5C	N	8/1/1989	**80**	ND	--	ND	**4900**	ND	ND	ND	ND	--	ND	ND	ND	**420**	**240**	**--**	**4700**	ND
BDC-MW-8C	8C-40.5S	N	8/1/1989	ND	ND	--	**25**	**1900**	ND	**5.8 J**	ND	ND	--	ND	ND	**2.4**	ND	ND	--	**1100**	**110**

Table F-6
Soil Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																	
				1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethene	2-Butanone/MEK	Acetone	Benzene	Carbon Disulfide	cis-1,2-Dichloroethene	Ethylbenzene	Methylene Chloride	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
BDC-MW-9D	9D-11.0	N	8/1/1989	ND	**5.6**	--	ND	**320**	ND	ND	ND	ND	--	**2 J**	ND	**810**	**10**	**11 J**	**--**	**640**	ND
BDC-MW-9D	9D-12.5	N	8/1/1989	ND	**7.3**	--	ND	**1400**	ND	ND	ND	ND	--	ND	ND	**490**	ND	**2.9 J**	**--**	**1400**	**14**
BDC-MW-9D	9D-15.5	N	8/1/1989	ND	**4 J**	--	**6.4**	**8500**	ND	**9.3 J**	ND	ND	--	ND	ND	**3900**	ND	**2.7 J**	**--**	**3700**	**160**
BDC-MW-9D	9D-18.5	N	8/1/1989	ND	ND	--	ND	**3200**	ND	ND	ND	ND	--	ND	ND	**320**	ND	ND	--	**980**	**77 J**
BDC-MW-9D	9D-27.5	N	8/1/1989	ND	ND	--	ND	ND	**1.5 J**	**2.2 J**	ND	ND	--	ND	ND	**1.7**	ND	ND	--	**0.6 J**	ND
BDC-MW-9D	9D-37.5	N	8/1/1989	ND	ND	--	ND	ND	ND	**13**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-9D	9D-55.0	N	8/1/1989	ND	ND	--	ND	ND	**3.3 J**	**6.9 J**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
9C-N	9C-N	N	8/1/1989	ND	ND	--	ND	**2 J**	ND	ND	ND	ND	ND	ND	ND	**27**	ND	ND	ND	**21**	ND
9C-S	9C-S	N	8/1/1989	ND	ND	--	ND	**1.5 J**	ND	ND	ND	ND	ND	ND	ND	**21**	ND	ND	ND	**14**	ND
BDC-MW-10C	10C-12	N	8/1/1989	ND	ND	--	ND	**200**	ND	ND	ND	ND	--	ND	ND	**290**	ND	ND	--	**220**	ND
BDC-MW-10C	10C-15	N	8/1/1989	ND	ND	--	**1.6 J**	**1300**	ND	**1.6 J**	ND	ND	--	ND	ND	**640**	ND	ND	--	**260**	**39**
BDC-MW-10C	10C-15DUP	FD	8/1/1989	ND	ND	--	**1.7 J**	**1300**	ND	**2.3 J**	ND	ND	--	ND	ND	**1100**	ND	ND	--	**420**	**35**
BDC-MW-10C	10C-22.5	N	8/1/1989	ND	ND	--	ND	**51**	ND	**4.9 J**	ND	ND	--	ND	ND	**230**	ND	ND	--	**43**	ND
BDC-MW-10C	10C-3	N	8/1/1989	ND	ND	--	ND	**11**	ND	**2 J**	ND	ND	--	ND	ND	**120**	ND	ND	--	**110**	ND
BDC-MW-10C	10C-39.0	N	8/1/1989	ND	ND	--	ND	ND	ND	**7.4 J**	ND	ND	--	**2 J**	ND	ND	ND	**3.6 J**	**--**	ND	ND
BDC-MW-11A	11A-11.0	N	8/1/1989	**2.1 J**	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	--	**2.2 J**	ND
BDC-MW-11A	11A-12.5	N	8/1/1989	ND	ND	--	ND	ND	**0.9 J**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-11A	11A-17.0	N	8/1/1989	ND	ND	--	ND	**1.3 J**	**0.6 J**	**5.1 J**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-12A	12A-12.0	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-12A	12A-13.5	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	--	**0.8 J**	ND
BDC-MW-12A	12A-35	N	8/1/1989	ND	ND	--	ND	ND	**11**	**24**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-13C	13C-11.0	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	**2.7 J**	ND	ND	--	**0.8 J**	ND
BDC-MW-13C	13C-12.5	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	**3.1 J**	ND	ND	--	**3.8 J**	ND
BDC-MW-13C	13C-30	N	8/1/1989	ND	ND	--	ND	ND	ND	**3.8 J**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	**18**
BDC-MW-13C	13C-35	N	8/1/1989	ND	ND	--	ND	**21**	**7.6 J**	**17**	ND	**0.8 J**	--	ND	ND	ND	ND	ND	--	ND	**41**
BDC-MW-14C	14C-12.5	N	8/1/1989	**490**	ND	--	ND	**160**	ND	ND	ND	ND	--	**430**	ND	**88**	**2500**	**2200**	**--**	**120**	ND
BDC-MW-14C	14C-18.5	N	8/1/1989	ND	ND	--	ND	**410**	ND	ND	ND	ND	--	ND	ND	**1400**	**9.6**	ND	--	**890**	ND
BDC-MW-14C	14C-27.5	N	8/1/1989	ND	ND	--	**1.1 J**	**610**	ND	ND	ND	ND	--	ND	ND	**1500**	ND	ND	--	**520**	**230**
BDC-MW-14C	14C-34	N	8/1/1989	ND	ND	--	ND	**2.3 J**	**14**	**52**	ND	**2.3 J**	--	ND	ND	**2.8 J**	ND	ND	--	ND	**67**
BDC-MW-14E	MW-14E (22.5)	N	1/1/1991	--	--	--	--	**31**	--	--	ND	--	--	--	--	ND	--	--	--	ND	**16**
BDC-MW-14E	MW-14E (30.0)	N	1/1/1991	--	--	--	--	**19**	--	--	ND	--	--	--	--	**77**	--	--	--	**5.9**	**13**
BDC-MW-14E	MW-14E (45.0)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-14E	MW-14E (50.0)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-14E	MW-14E (77.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-14E	MW-14E (82.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-15D	15D-11.0	N	8/1/1989	ND	ND	--	ND	ND	**1 J**	--	ND	ND	--	ND	ND	ND	ND	ND	--	ND	**2.9 J**

Table F-6
Soil Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																		
				1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethene	2-Butanone/MEK	Acetone	Benzene	Carbon Disulfide	cis-1,2-Dichloroethene	Ethylbenzene	Methylene Chloride	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
BDC-MW-15D	15D-18.5	N	8/1/1989	ND	ND	--	ND	**390**	ND	**10 J**	ND	ND	--	ND	ND	ND	ND	ND	--	**140**	ND
BDC-MW-15D	15D-30	N	8/1/1989	ND	ND	--	**0.7 J**	**770**	ND	**6.4 J**	ND	ND	--	ND	ND	ND	ND	ND	--	**6.9**	**49**
BDC-MW-15D	15D-36	N	8/1/1989	ND	ND	--	ND	ND	**1.3 J**	**9.5**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-15D	15D-45.0	N	8/1/1989	ND	ND	--	ND	ND	ND	**6.6 J**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-15D	15D-5.0	N	8/1/1989	ND	ND	--	ND	**3.6 J**	**8.3 J**	**15**	**0.5 J**	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-15D	15D-50.0	N	8/1/1989	ND	ND	--	ND	ND	ND	**8.1 J**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-15D	15D-50.0-DUP	FD	8/1/1989	ND	ND	--	ND	ND	**1 J**	**8.6**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-15D	15D-55.0	N	8/1/1989	ND	ND	--	ND	ND	ND	**8.7 J**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-15D	15D-8	N	8/1/1989	ND	ND	--	ND	ND	**12**	**39**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-16C	16C-13.5	N	8/1/1989	ND	ND	--	ND	**0.9 J**	ND	ND	ND	ND	--	ND	ND	**12**	ND	ND	--	**20**	ND
BDC-MW-16C	16C-18.0	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-16C	16C-27.5	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	**3.9 J**	ND	ND	--	**1.8 J**	ND
BDC-MW-16C	16C-3.0	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	**3.6 J**	ND	ND	--	**5.8**	ND
BDC-MW-16C	16C-35.0	N	8/1/1989	ND	ND	--	ND	ND	**3.3 J**	**8.1**	**0.6 J**	**0.5 J**	--	**1 J**	ND	ND	ND	ND	--	ND	ND
BDC-MW-16C	16C-4.5	N	8/1/1989	ND	ND	--	ND	ND	ND	ND	ND	ND	--	ND	ND	**26**	ND	ND	--	**18**	ND
BDC-MW-17D	MW-17D (12.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	**1.0 J**	--	--	--	**8.7**	ND
BDC-MW-17D	MW-17D (15.0)	N	1/1/1991	--	--	--	--	**1.9**	--	--	ND	--	--	--	--	ND	--	--	--	**16**	ND
BDC-MW-17D	MW-17D (22.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-17D	MW-17D (29.5)	N	1/1/1991	--	--	--	--	**7.7**	--	--	ND	--	--	--	--	ND	--	--	--	**4.9**	ND
BDC-MW-17D	MW-17D (47.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-18D	MW-18D (11.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-18D	MW-18D (17.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-18D	MW-18D (25.0)	N	1/1/1991	--	--	--	--	ND	--	--	**2.4 J**	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-18D	MW-18D (37.5)	N	1/1/1991	--	--	--	--	ND	--	--	**1.2 J**	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-18D	MW-18D (49.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-19D	MW-19D (10.0)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-19D	MW-19D (15.0)	N	1/1/1991	--	--	--	--	**1.0 J**	--	--	ND	--	--	--	--	ND	--	--	--	**0.9 J**	ND
BDC-MW-19D	MW-19D (22.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-19D	MW-19D (35.0)	N	1/1/1991	--	--	--	--	ND	--	--	**1.2 J**	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-19D	MW-19D (42.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-19D	MW-19D (47.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-20D	MW-20D (10.0)	N	1/1/1991	--	--	--	--	**2.8**	--	--	ND	--	--	--	--	ND	--	--	--	**0.9 J**	ND
BDC-MW-20D	MW-20D (20.0)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-20D	MW-20D (27.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-20D	MW-20D (30.0)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-20D	MW-20D (40.5)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND

Table F-6
Soil Volatile Organic Compound Analytical Results
Boeing Developmental Center
Tukwila, Washington

				Analyte, Fraction Analyzed, Unit of Measurement																	
				1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethene	2-Butanone/MEK	Acetone	Benzene	Carbon Disulfide	cis-1,2-Dichloroethene	Ethylbenzene	Methylene Chloride	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride
				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sample Location	**Sample ID**	**Sample Type**	**Sample Date**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
BDC-MW-20D	MW-20D (42.0)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-20D	MW-20D (48.0)	N	1/1/1991	--	--	--	--	ND	--	--	ND	--	--	--	--	ND	--	--	--	ND	ND
BDC-MW-E1	E1 (22.0)	N	8/1/1989	ND	ND	ND	ND	**17**	ND	**23**	ND	ND	--	ND	ND	**9.0**	ND	ND	--	**5.8**	ND
BDC-MW-E1	E1 (26.5)	N	8/1/1989	ND	ND	ND	ND	**2.1**	ND	**12**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-E1	E1 (35.0)	N	8/1/1989	ND	ND	ND	ND	ND	ND	**11**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-E1	E1 (37.0)	N	8/1/1989	ND	ND	ND	ND	ND	ND	**16**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
BDC-MW-E1	E1 (39.5)	N	8/1/1989	ND	ND	ND	ND	ND	ND	**14**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
Bldg 9-101-1	1-10.5	N	8/1/1989	ND	ND	ND	ND	**24**	ND	ND	ND	ND	--	ND	**6**	**960**	ND	ND	--	**200**	ND
Bldg 9-101-1	1-12.0	N	8/1/1989	ND	ND	ND	ND	**590**	ND	ND	ND	ND	--	ND	ND	**6300**	ND	ND	--	**2100**	ND
Bldg 9-101-1	1-13.5	N	8/1/1989	ND	ND	ND	ND	**2000**	ND	**60**	ND	ND	--	ND	ND	**12000**	ND	ND	--	**6800**	ND
Bldg 9-101-1	1-38.0	N	8/1/1989	ND	ND	ND	ND	**130**	ND	**64**	ND	ND	--	ND	**5**	ND	ND	ND	--	ND	**430**
Bldg 9-101-1	1-5.5	N	8/1/1989	ND	ND	ND	ND	**4 J**	ND	ND	ND	ND	--	ND	**4 J**	**160**	ND	ND	--	**52**	ND
Bldg 9-101-2	2-14.0 A	N	8/1/1989	ND	ND	ND	ND	**33**	ND	ND	ND	**3 J**	--	ND	ND	**1900**	ND	ND	--	**280**	ND
Bldg 9-101-2	2-15.5 A	N	8/1/1989	ND	ND	ND	ND	**30**	ND	ND	ND	ND	--	ND	ND	**3600000**	ND	ND	--	**250000**	ND
Bldg 9-101-2	2-32.0 A	N	8/1/1989	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	**44**	ND	ND	--	**2 J**	ND
Bldg 9-101-3	3-10.0 A	N	8/1/1989	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
Bldg 9-101-4	4-11.5 A	N	8/1/1989	ND	ND	ND	ND	ND	ND	**30**	ND	ND	--	ND	ND	ND	ND	ND	--	ND	ND
Bldg 9-101-5	5-11.0 A	N	8/1/1989	ND	ND	ND	ND	**14**	ND	ND	ND	ND	--	ND	ND	**460**	ND	ND	--	**120**	ND
Bldg 9-101-5	5-14.0 A	N	8/1/1989	ND	ND	ND	ND	**61**	ND	ND	ND	ND	--	ND	**3 J**	**670**	ND	ND	--	**82**	ND
Test Pit 1	TEST PIT 1 (DRY)	N	6/1/1989	**2 J**	--	--	ND	**--**	ND	ND	ND	**--**	ND	**--**	**2 J**	**5**	**--**	**--**	ND	ND	**--**
Test Pit 1	TEST PIT 1 (CAPILLARY)	N	6/1/1989	ND	--	--	ND	--	ND	ND	ND	--	**2 J**	--	ND	**11**	--	--	ND	**3 J**	--
Test Pit 1	TEST PIT 1 (SATURATED)	N	6/1/1989	ND	--	--	ND	--	ND	**26**	ND	--	**2 J**	--	ND	**30**	--	--	ND	**2 J**	--
Test Pit 2	TEST PIT 2 (DRY)	N	6/1/1989	ND	--	--	ND	**--**	ND	ND	ND	**--**	ND	--	ND	**2**	--	--	ND	ND	--
Test Pit 3	TEST PIT 3 (CAPILLARY)	N	6/1/1989	ND	--	--	ND	--	ND	ND	ND	--	ND	--	ND	ND	--	--	ND	ND	--
Tub Skid 1	TUB SKID 1	N	8/1/1989	ND	ND	ND	ND	**1600**	ND	ND	ND	ND	--	ND	ND	**2600**	ND	ND	--	**140**	ND
Tub Skid 2	TUB SKID 2	N	8/1/1989	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	**0.4 J**	ND	ND	--	ND	ND
Tub Skid 3	TUB SKID 3	N	8/1/1989	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND	**18**	ND	ND	--	**5.5**	ND

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Bold text indicates detected analyte

Abbreviations and Acronyms:

-- = not analyzed
ID = Identification
N/A = not applicable
µg/kg = micrograms per kilogram
N = primary sample
ND = not detected

APPENDIX G

Historical Air Analytical Data Table

Table G-1
Indoor and Ambient Air Analytical Results
Building 9-90
Boeing Developmental Center
Tukwila, Washington

Analyte	Sample Location, Lab SDG, Sample Date, Sample Type			
	IA-990-01 601388 1/18/2006 N	IA-990-01A 601388 1/18/2006 N	IA-990-02 601388 1/18/2006 N	AA-990-01 601388 1/18/2006 N
Volatile Organic Compounds (µg/m^3; EPA TO-15-SIM)				
cis-1,2-Dichloroethene	0.14 U	0.13 U	0.14 U	0.13 U
Tetrachloroethene	**0.39**	**0.39**	**0.44**	**0.41**
Trichloroethene	**0.13**	**0.12**	**0.13**	**0.11**
Vinyl Chloride	0.045 U	0.042 U	0.045 U	0.041 U

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
Bold text indicates detected analyte

Abbreviations/Acronyms:

µg/m^3 = micrograms per cubic meter
AA = ambient air sample
EPA = US Environmental Protection Agency
IA = indoor air sample
Lab = laboratory
N = primary sample
SDG = sample delivery group
SIM = selected ion monitoring

APPENDIX H

Historical Groundwater Elevation Data

Table H-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			November 2019		May 2019		February 2019		November 2018		August 2018		May 2018		February 2018		November 2017		August 2017		May 2017		February 2017		November 2016		August 2016		April 2016	
Well Location / Bldg.	Well ID No.	Well Depth (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)
9-101-bldg.	MW-6A	24.25	13.14	1.66	12.81	1.99			12.90	1.90			12.29	2.51			12.81	1.99			11.97	2.83			12.13	2.67			12.38	2.42
9-101-bldg.	MW-6B	27.20	13.53	1.56	13.02	2.07			13.08	2.01			12.60	2.49			13.15	1.94			12.31	2.78			12.82	2.27			12.77	2.32
9-101-bldg.	MW-6C	40.55																												
9-101-bldg.	MW-8C	40.20																												
9-101-bldg.	MW-9A	21.30	13.18	1.56	12.83	1.91			12.83	1.91			12.45	2.29			12.91	1.83			12.07	2.67			12.18	2.56			12.37	2.37
9-101-bldg.	MW-9B	26.90																												
9-101-bldg.	MW-9C	38.80																												
9-101-bldg.	MW-9D	56.00																												
9-101-bldg.	MW-10A	20.20																												
9-101-bldg.	MW-10C	40.40	13.11	1.53	12.78	1.86			12.82	1.82			12.39	2.25			12.86	1.78			11.97	2.67			12.16	2.48			12.37	2.27
9-101-bldg.	MW-11A	19.90	13.23	1.65	12.80	2.08			12.89	1.99			12.39	2.49			12.96	1.92			12.03	2.85			12.14	2.74			12.47	2.41
9-101-bldg.	MW-12A	20.20																												
9-101-bldg.	MW-13A	19.37	12.56	1.58	12.38	1.76			12.37	1.77			11.77	2.37			12.28	1.86			11.57	2.57			11.55	2.59			11.82	2.32
9-101-bldg.	MW-13C	35.62	12.33	1.69	12.16	1.86			12.21	1.81			11.60	2.42			12.10	1.92			11.39	2.63			11.41	2.61			11.71	2.31
9-101-bldg.	MW-14A	19.00																												
9-101-bldg.	MW-14C	33.30	12.47	1.50	12.23	1.74			12.14	1.83			11.80	2.17			12.10	1.87			11.40	2.57			11.33	2.64			11.78	2.19
9-101-bldg.	MW-14E	82.10																												
9-101-bldg.	MW-15A	20.70																												
9-101-bldg.	MW-15C	34.35	13.14	1.41	12.89	1.66			12.78	1.77			12.41	2.14			12.79	1.76			12.00	2.55			11.98	2.57			12.45	2.10
9-101-bldg.	MW-15D	51.80																												
9-101-bldg.	MW-16A	20.55	13.29	1.70	12.94	2.05			13.04	1.95			12.54	2.45			12.99	2.00			12.18	2.81			12.32	2.67			12.60	2.39
9-101-bldg.	MW-16C	38.30	13.44	1.60	13.09	1.95			13.16	1.88			12.72	2.32			13.14	1.90			12.33	2.71			12.54	2.50			12.70	2.34
9-101-bldg.	MW-17A	19.00	13.11	1.55	12.71	1.95			12.81	1.85			12.24	2.42			12.81	1.85			11.97	2.69			12.11	2.55			12.28	2.38
9-101-bldg.	MW-17C	35.00																												
9-101-bldg.	MW-17D	52.50																												
9-101-bldg.	MW-18A	20.02	12.85	1.45	12.47	1.83			12.50	1.80			11.91	2.39			12.50	1.80			11.73	2.57			11.68	2.62			11.87	2.43
9-101-bldg.	MW-18C	34.55																												
9-101-bldg.	MW-18D	52.85																												
9-101-bldg.	MW-19A	16.86																												
9-101-bldg.	MW-19C	33.92																												
9-101-bldg.	MW-19D	51.86																												
9-101-bldg.	MW-20A	19.34																												
9-101-bldg.	MW-20C	35.32	12.82	1.33	12.46	1.69			12.39	1.76			11.96	2.19			12.45	1.70			11.59	2.56			11.55	2.60			11.95	2.20
9-101-bldg.	MW-20D	50.15																												
9-101-bldg.	MW-22A	19.20	12.72	1.53	12.62	1.63			12.55	1.70			12.08	2.17			12.55	1.70			11.79	2.46			11.79	2.46			12.12	2.13
9-101-bldg.	MW-23A	19.50																												
9-101/9-50 bldg.	MW-21A	19.90	13.09	1.36	12.66	1.79			12.69	1.76			12.12	2.33			12.68	1.77			11.97	2.48			11.85	2.60			12.10	2.35
9-101/9-50 bldg.	MW-21C	34.00																												
9-64-bldg.	BDC-05-02	25.35	12.64	1.77	12.19	2.22			12.39	2.02			11.76	2.65			12.42	1.99	12.31	2.10	11.46	2.95	11.24	3.17	11.68	2.73	12.53	1.88	11.77	2.64
9-64-bldg.	BDC-05-03	25.47	12.78	1.63	12.43	1.98			12.58	1.83			11.94	2.47			12.45	1.96			11.58	2.83			11.71	2.70			11.86	2.55
9-64-bldg.	BDC-05-04	25.36	12.76	1.83	12.37	2.22			12.62	1.97			11.95	2.64			12.58	2.01			11.62	2.97			11.86	2.73			11.95	2.64
9-64-bldg.	BDC-05-05	24.18	12.45	1.99	12.00	2.44			12.32	2.12			11.58	2.86			12.27	2.17			11.19	3.25			11.52	2.92			11.57	2.87
9-64-bldg.	BDC-05-07	25.30	12.24	1.75	11.70	2.29			11.96	2.03			11.34	2.65			12.03	1.96			11.02	2.97			11.22	2.77			11.38	2.61
9-64-bldg.	BDC-05-08	26.75	13.02	1.65	12.62	2.05			12.74	1.93			12.12	2.55			12.71	1.96			11.88	2.79			11.95	2.72			12.11	2.56
9-64-bldg.	BDC-05-09	24.55	12.66	1.75	12.25	2.16			12.40	2.01			11.79	2.62			12.41	2.00			11.49	2.92			11.68	2.73			11.80	2.61
9-64-bldg.	BDC-05-10	24.57	12.63	1.78	12.23	2.18			12.42	1.99			11.74	2.67			12.44	1.97			11.31	3.10			11.62	2.79			11.80	2.61
9-64-bldg.	BDC-05-11	24.85	12.78	1.87	12.48	2.17			12.60	2.05			11.96	2.69			12.58	2.07			11.71	2.94			11.78	2.87			12.02	2.63
9-64-bldg.	BDC-05-12	24.87	12.91	1.81	12.54	2.18			12.65	2.07			11.94	2.78			12.68	2.04	12.62	2.10	11.80	2.92	11.50	3.22	11.91	2.81	12.80	1.92	12.11	2.61
9-64-bldg.	BDC-05-13	24.78	12.66	1.77	12.31	2.12			12.44	1.99			11.45	2.98			12.44	1.99			11.62	2.81			11.68	2.75			11.87	2.56
9-64-bldg.	BDC-05-14	24.85	12.47	1.75	12.14	2.08			12.26	1.96			11.71	2.51			12.25	1.97			11.39	2.83			11.52	2.70			11.71	2.51
9-64-bldg.	BDC-05-15	24.48	12.28	1.69	11.89	2.08			12.02	1.95			11.26	2.71			11.94	2.03			11.20	2.77			11.28	2.69			11.49	2.48
9-64-bldg.	BDC-05-16	24.89	12.38	1.69	12.04	2.03			12.14	1.93			11.51	2.56			12.10	1.97	12.13	1.94	11.32	2.75	11.05	3.02	11.43	2.64	12.31	1.76	11.65	2.42
9-64-bldg.	BDC-05-17	24.82	12.61	1.64	12.18	2.07			12.37	1.88			11.77	2.48			12.33	1.92			11.56	2.69			11.65	2.60			11.86	2.39
9-64-bldg.	BDC-05-18	24.69	12.10	1.69	11.69	2.10			11.87	1.92			11.19	2.60			11.73	2.06	11.77	2.02	10.92	2.87	10.70	3.09	11.13	2.66	11.96	1.83	11.22	2.57
9-64-bldg.	BDC-05-19	24.85	12.79	1.77	12.46	2.10			12.48	2.08			11.97	2.59			12.58	1.98	12.52	2.04	11.73	2.83	11.43	3.13	11.82	2.74	12.68	1.88	11.99	2.57
9-64-bldg.	BDC-05-20	24.80	12.77	1.57	12.38	1.96			12.49	1.85			11.91	2.43			12.41	1.93	12.44	1.90	11.66	2.68	11.34	3.00	11.74	2.60	12.62	1.72	11.92	2.42
9-64-bldg.	BDC-05-21	24.86	12.66	1.53	12.33	1.86			12.37	1.82			11.82	2.37			12.31	1.88	12.29	1.90	11.49	2.70	11.16	3.03	11.57	2.62	12.50	1.69	11.80	2.39
9-64-bldg.	BDC-05-22	25.07	12.61	1.55	12.22	1.94			11.31	2.85			11.73	2.43			12.21	1.95	12.22	1.94	11.45	2.71	11.16	3.00	11.59	2.57	12.42	1.74	11.73	2.43
9-64-bldg.	BDC-05-23	25.10	13.12	1.34	12.76	1.70			12.75	1.71			12.26	2.20			12.69	1.77	12.74	1.72	11.94	2.52	11.48	2.98	12.02	2.44	12.88	1.58	12.25	2.21
9-64-bldg.	BDC-05-24	24.73	12.50	1.69	12.15	2.04			12.26	1.93			11.66	2.53			12.10	2.09	12.23	1.96	11.39	2.80	11.10	3.09	11.48	2.71	12.37	1.82	11.68	2.51
9-60 bldg.	BDC-101	18.42	12.37	2.10	11.87	2.60	11.19	3.28	12.20	2.27	12.21	2.26	11.41	3.06	10.66	3.81	12.21	2.26	12.08	2.39	11.02	3.45	10.97	3.50	11.55	2.92	12.30	2.17	11.27	3.20
9-60 bldg.	BDC-102	18.83	12.15	2.12	11.70	2.57	10.98	3.29	11.97	2.30	12.01	2.26	11.18	3.09	10.53	3.74	11.94	2.33	11.85	2.42	10.86	3.41	10.73	3.54	11.32	2.95	12.07	2.20	11.09	3.18
9-60 bldg.	BDC-103	18.51	12.08	2.26	11.63	2.71	10.94	3.40	12.00	2.34	12.01	2.33	11.10	3.24	10.38	3.96	11.89	2.45	11.82	2.52	10.76	3.58	10.69	3.65	11.39	2.95	12.13	2.21	10.97	3.37
9-60 bldg.	BDC-104	18.90	11.89	2.27	11.37	2.79	10.72	3.44	11.79	2.37	11.81	2.35	10.88	3.28	10.19	3.97	11.72	2.44	11.61	2.55	10.52	3.64	10.51	3.65	11.03	3.13	11.89	2.27	10.73	3.43
9-52-bldg.	952MW-1	17.40																												
9-52-bldg.	952MW-2	17.54																												
9-52-bldg.	952MW-3	17.95																												
9-52-bldg. (west)	MW-5	27.43																												
9-04-bldg. (north)	MW-2	26.98																												
9-04-bldg. (north)	MW-7	18.50																												
9-04-bldg. (north)	MW-8	18.50																												
9-04-bldg. (north)	MW-9	18.50																												
9-101-bldg.	MW-20D	50.15																												

Table H-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			January 2016		October 2015		July 2015		April 2015		January 2015		November 2014		August 2014		May 2014		February 2014		November 2013		August 2013		May 2013		February 2013		November 2012	
Well Location / Bldg.	Well ID No.	Well Depth (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)
9-101-bldg.	MW-6A	24.25			12.80	2.00			12.65	2.15			12.22	2.58			12.10	2.70			12.82	1.98			12.92	1.88			12.82	1.98
9-101-bldg.	MW-6B	27.20			13.16	1.93			13.02	2.07			12.58	2.51			14.44	0.65			13.16	1.93			13.27	1.82			13.17	1.92
9-101-bldg.	MW-6C	40.55																												
9-101-bldg.	MW-8C	40.20																												
9-101-bldg.	MW-9A	21.30			12.83	1.91			12.64	2.10			12.18	2.56			12.07	2.67			12.88	1.86			12.80	1.94			12.83	1.91
9-101-bldg.	MW-9B	26.90																												
9-101-bldg.	MW-9C	38.80																												
9-101-bldg.	MW-9D	56.00																												
9-101-bldg.	MW-10A	20.20											12.14	2.55			11.98	2.71			12.81	1.88			12.72	1.97			12.77	1.92
9-101-bldg.	MW-10C	40.40			12.66	1.96			12.57	2.05			12.06	2.56			11.91	2.71			12.73	1.89			12.65	1.97			12.70	1.92
9-101-bldg.	MW-11A	19.90			12.87	2.01			12.74	2.14			12.31	2.57			12.10	2.78			12.89	1.99			12.84	2.04			12.19	2.69
9-101-bldg.	MW-12A	20.20											12.38	2.45			12.17	2.66			12.98	1.85			12.88	1.95			13.01	1.82
9-101-bldg.	MW-13A	19.37			12.23	1.91			12.19	1.95			11.71	2.43			11.62	2.52			12.37	1.77			12.36	1.78			12.27	1.87
9-101-bldg.	MW-13C	35.62			12.08	1.94			12.07	1.95			11.59	2.43			11.49	2.53			12.23	1.79			12.22	1.80			12.11	1.91
9-101-bldg.	MW-14A	19.00											11.93	2.44			11.85	2.52			12.59	1.78			12.65	1.72			12.53	1.84
9-101-bldg.	MW-14C	33.30			11.95	2.02			11.95	2.02			11.54	2.43			11.49	2.48			12.17	1.80			12.25	1.72			12.07	1.90
9-101-bldg.	MW-14E	82.10																												
9-101-bldg.	MW-15A	20.70											11.77	2.40			11.72	2.45			12.44	1.73			12.48	1.69			12.34	1.83
9-101-bldg.	MW-15C	34.35			12.19	1.98			12.29	1.88			11.70	2.47			11.71	2.46			12.42	1.75			12.54	1.63			12.27	1.90
9-101-bldg.	MW-15D	51.80																												
9-101-bldg.	MW-16A	20.55			12.96	2.03			12.85	2.14			12.40	2.59			12.22	2.77			13.06	1.93			13.07	1.92			13.02	1.97
9-101-bldg.	MW-16C	38.30			13.14	1.90			13.02	2.02			12.58	2.46			12.32	2.72			13.24	1.80			13.25	1.79			13.17	1.87
9-101-bldg.	MW-17A	19.00			12.83	1.97			12.67	2.13			12.25	2.55			12.11	2.69			12.90	1.90			12.98	1.82			12.78	2.02
9-101-bldg.	MW-17C	35.00																												
9-101-bldg.	MW-17D	52.50																												
9-101-bldg.	MW-18A	20.02			12.36	1.94			12.26	2.04			11.86	2.44			11.70	2.60			12.23	2.07			12.58	1.72			12.39	1.91
9-101-bldg.	MW-18C	34.55																												
9-101-bldg.	MW-18D	52.85																												
9-101-bldg.	MW-19A	16.86																							10.74	1.49				
9-101-bldg.	MW-19C	33.92																												
9-101-bldg.	MW-19D	51.86																												
9-101-bldg.	MW-20A	19.34																												
9-101-bldg.	MW-20C	35.32			12.14	2.01			12.19	1.96			11.61	2.54			11.58	2.57			12.40	1.75			12.50	1.65			12.22	1.93
9-101-bldg.	MW-20D	50.15																												
9-101-bldg.	MW-22A	19.20			12.34	1.91			12.33	1.92			11.96	2.29			11.90	2.35			12.42	1.83			12.72	1.53			12.42	1.83
9-101-bldg.	MW-23A	19.50																												
9-101/9-50 bldg.	MW-21A	19.90			12.55	1.90			12.48	1.97			12.06	2.39			11.90	2.55			12.39	2.06			12.80	1.65			12.60	1.85
9-101/9-50 bldg.	MW-21C	34.00																												
9-64-bldg.	BDC-05-02	25.35	10.85	3.56	12.28	2.13	12.30	2.11	12.07	2.34	11.49	2.92	11.77	2.64	12.26	2.15	11.69	2.72	12.21	2.20	12.36	2.05	12.47	1.94	12.29	2.12	12.19	2.22	12.31	2.10
9-64-bldg.	BDC-05-03	25.47			12.33	2.08			12.19	2.22			11.79	2.62			11.76	2.65			12.43	1.98			12.36	2.05			12.36	2.05
9-64-bldg.	BDC-05-04	25.36			12.54	2.05			12.26	2.33			11.95	2.64			11.93	2.66			12.51	2.08			12.17	2.42			12.52	2.07
9-64-bldg.	BDC-05-05	24.18			12.18	2.26			11.86	2.58			11.53	2.91			11.47	2.97			12.15	2.29			12.13	2.31			13.40	1.04
9-64-bldg.	BDC-05-07	25.30			11.88	2.11			11.67	2.32			11.37	2.62			11.29	2.70			11.96	2.03			11.92	2.07			11.97	2.02
9-64-bldg.	BDC-05-08	26.75			12.62	2.05			12.47	2.20			12.10	2.57			12.07	2.60			12.72	1.95			12.64	2.03			12.64	2.03
9-64-bldg.	BDC-05-09	24.55			12.30	2.11			12.10	2.31			11.79	2.62			11.71	2.70			12.37	2.04			12.31	2.10			12.36	2.05
9-64-bldg.	BDC-05-10	24.57			12.27	2.14			12.11	2.30			11.72	2.69			11.70	2.71			12.36	2.05			12.31	2.10			12.30	2.11
9-64-bldg.	BDC-05-11	24.85			12.99	1.66			12.33	2.32			11.93	2.72			11.91	2.74			12.59	2.06			12.51	2.14			12.55	2.10
9-64-bldg.	BDC-05-12	24.87	11.21	3.51	12.59	2.13	12.63	2.09	12.43	2.29	11.83	2.89	12.06	2.66	12.58	2.14	12.01	2.71	12.53	2.19	12.88	1.84	12.78	1.94	12.61	2.11	12.53	2.19	12.66	2.06
9-64-bldg.	BDC-05-13	24.78			12.37	2.06			12.20	2.23			11.85	2.58			11.86	2.57			12.44	1.99			12.40	2.03			12.44	1.99
9-64-bldg.	BDC-05-14	24.85			12.18	2.04			12.03	2.19			11.70	2.52			11.68	2.54			12.25	1.97			12.21	2.01			12.29	1.93
9-64-bldg.	BDC-05-15	24.48			11.95	2.02			11.83	2.14			11.47	2.50			11.42	2.55			12.04	1.93			12.07	1.90			11.97	2.00
9-64-bldg.	BDC-05-16	24.89	10.79	3.28	12.10	1.97	12.10	1.97	11.90	2.17	11.31	2.76	11.65	2.42	12.04	2.03	11.60	2.47	12.00	2.07	12.16	1.91	12.25	1.82	12.19	1.88	12.04	2.03	12.09	1.98
9-64-bldg.	BDC-05-17	24.82			12.29	1.96			12.12	2.13			11.86	2.39			11.83	2.42			12.34	1.91			12.30	1.95			12.27	1.98
9-64-bldg.	BDC-05-18	24.69	10.34	3.45	11.77	2.02	11.75	2.04	11.50	2.29	10.98	2.81	11.14	2.65	11.51	2.28	11.16	2.63	11.62	2.17	11.71	2.08	11.90	1.89	11.72	2.07	11.63	2.16	11.75	2.04
9-64-bldg.	BDC-05-19	24.85	11.11	3.45	12.49	2.07	12.53	2.03	12.33	2.23	11.61	2.95	11.96	2.60	12.47	2.09	11.91	2.65	12.43	2.13	12.58	1.98	12.68	1.88	12.52	2.04	12.44	2.12	12.60	1.96
9-64-bldg.	BDC-05-20	24.80	11.08	3.26	12.37	1.97	12.42	1.92	12.25	2.09	11.64	2.70	11.92	2.42	12.45	1.89	11.95	2.39	12.28	2.06	12.46	1.88	12.55	1.79	12.38	1.96	12.41	1.93	12.44	1.90
9-64-bldg.	BDC-05-21	24.86	10.96	3.23	12.22	1.97	12.24	1.95	12.10	2.09	11.51	2.68	11.80	2.39	12.29	1.90	11.79	2.40	12.15	2.04	12.30	1.89	12.42	1.77	12.26	1.93	12.25	1.94	12.30	1.89
9-64-bldg.	BDC-05-22	25.07	10.89	3.27	12.19	1.97	12.29	1.87	12.04	2.12	11.47	2.69	11.74	2.42	12.25	1.91	11.75	2.41	12.08	2.08	12.25	1.91	12.38	1.78	12.22	1.94	12.18	1.98	12.24	1.92
9-64-bldg.	BDC-05-23	25.10	11.40	3.06	12.57	1.89	12.85	1.61	12.51	1.95	11.98	2.48	12.27	2.19	12.81	1.65	12.36	2.10	12.51	1.95	12.74	1.72	12.83	1.63	12.70	1.76	12.56	1.90	12.74	1.72
9-64-bldg.	BDC-05-24	24.73	10.81	3.38	12.15	2.04	12.21	1.98	12.00	2.19	11.43	2.76	11.65	2.54	12.12	2.07	11.64	2.55	12.04	2.15	12.22	1.97	12.34	1.85	12.19	2.00	12.09	2.10	12.20	1.99
9-60 bldg.	BDC-101	18.42	10.51	3.96	12.20	2.27	12.12	2.35	11.75	2.72	11.22	3.25	11.44	3.03	12.08	2.39	11.22	3.25	11.97	2.50	11.99	2.48	12.27	2.20	11.99	2.48	11.77	2.70	12.20	2.27
9-60 bldg.	BDC-102	18.83	10.30	3.97	11.98	2.29	11.94	2.33	11.57	2.70	11.01	3.26	11.20	3.07	11.87	2.40	10.97	3.30	11.73	2.54	11.75	2.52	12.04	2.23	11.79	2.48	11.55	2.72	11.93	2.34
9-60 bldg.	BDC-103	18.51	10.22	4.12	12.02	2.32	11.94	2.40	11.49	2.85	10.93	3.41	11.01	3.33	11.88	2.46	10.85	3.49	11.75	2.59	11.66	2.68	12.06	2.28	11.71	2.63	11.43	2.91	11.88	2.46
9-60 bldg.	BDC-104	18.90	10.02	4.14	11.95	2.21	11.75	2.41	11.23	2.93	10.74	3.42	10.88	3.28	11.67	2.49	10.66	3.50	11.45	2.71	11.51	2.65	11.87	2.29	11.51	2.65	11.24	2.92	11.78	2.38
9-52-bldg.	952MW-1	17.40																												
9-52-bldg.	952MW-2	17.54																												
9-52-bldg.	952MW-3	17.95																												
9-52-bldg. (west)	MW-5	27.43																												
9-04-bldg. (north)	MW-2	26.98																												
9-04-bldg. (north)	MW-7	18.50																												
9-04-bldg. (north)	MW-8	18.50																												
9-04-bldg. (north)	MW-9	18.50																												

Table H-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			May 2012		November 2011		July 2011		May 2011		November 2010		May 2010		November 2009		May 2009		November 2008		May 2008		November 2007		May 2007		February 2007		November 2006	
Well Location / Bldg.	Well ID No.	Well Depth (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)
9-101-bldg.	MW-6A	24.25	12.61	2.19	12.99	1.81			12.50	2.30	12.70	2.10	12.69	2.11	12.42	2.38	12.73	2.07	12.79	2.01	12.87	1.93	13.08	1.72	12.97	1.83	12.42	2.38	12.30	2.50
9-101-bldg.	MW-6B	27.20	12.96	2.13	13.29	1.80			12.81	2.28	13.06	2.03	13.04	2.05	12.73	2.36	13.08	2.01	13.12	1.97	13.21	1.88	13.46	1.63	13.32	1.77	12.75	2.34	12.67	2.42
9-101-bldg.	MW-6C	40.55													12.72	2.35	13.05	2.02	13.06	2.01	13.13	1.94	13.41	1.66	13.27	1.80	12.69	2.38	12.65	2.42
9-101-bldg.	MW-8C	40.20													12.70	2.22	13.01	1.91	12.88	2.04	13.16	1.76	13.28	1.64	13.00	1.92			12.21	2.71
9-101-bldg.	MW-9A	21.30	12.54	2.20	13.03	1.71			12.53	2.21	12.65	2.09	12.65	2.09	12.43	2.31	12.77	1.97	12.69	2.05	12.93	1.81	13.07	1.67	12.90	1.84	12.36	2.38	12.12	2.62
9-101-bldg.	MW-9B	26.90													12.30	2.29	12.64	1.95	12.68	1.91	12.75	1.84	12.91	1.68	12.71	1.88	12.19	2.40	11.95	2.64
9-101-bldg.	MW-9C	38.80													12.40	2.26	12.67	1.99	12.66	2.00	12.82	1.84	13.02	1.64	12.81	1.85	12.20	2.46	12.05	2.61
9-101-bldg.	MW-9D	56.00													12.43	2.23	12.79	1.87	12.78	1.88	12.90	1.76	13.56	1.10	12.88	1.78			12.30	2.36
9-101-bldg.	MW-10A	20.20	12.55	2.14	12.97	1.72			12.47	2.22	12.64	2.05	12.62	2.07	12.46	2.23	12.65	2.04	12.68	2.01	12.89	1.80	13.05	1.64	12.72	1.97	12.35	2.34	12.06	2.63
9-101-bldg.	MW-10C	40.40	12.49	2.13	12.90	1.72			12.38	2.24	12.55	2.07	12.53	2.09	12.41	2.21	12.60	2.02	12.62	2.00	12.78	1.84	12.96	1.66	12.77	1.85			11.99	2.63
9-101-bldg.	MW-11A	19.90	12.65	2.23	13.03	1.85			12.62	2.26	12.59	2.29	12.69	2.19	12.52	2.36	12.81	2.07	12.81	2.07	13.16	1.72	13.16	1.72	12.96	1.92			11.85	3.03
9-101-bldg.	MW-12A	20.20	12.70	2.13	13.23	1.60			12.71	2.12	12.68	2.15	12.73	2.10	12.56	2.27	12.96	1.87	12.91	1.92	13.22	1.61	13.24	1.59	13.00	1.83			11.89	2.94
9-101-bldg.	MW-13A	19.37	12.20	1.94	12.66	1.48			12.11	2.03	12.08	2.06	12.14	2.00	11.89	2.25	12.29	1.85	12.25	1.89	12.62	1.52	12.42	1.72	12.33	1.81			11.50	2.64
9-101-bldg.	MW-13C	35.62	12.06	1.96	12.52	1.50			11.94	2.08	11.92	2.10	12.02	2.00	11.71	2.31	12.14	1.88	12.12	1.90	12.46	1.56	12.29	1.73	12.20	1.82			11.35	2.67
9-101-bldg.	MW-14A	19.00	12.46	1.91	12.71	1.66			12.16	2.21	12.22	2.15	12.39	1.98	12.10	2.27	12.50	1.87	12.50	1.87	12.64	1.73	12.55	1.82	12.73	1.64	12.03	2.34	11.46	2.91
9-101-bldg.	MW-14C	33.30	12.09	1.88	12.20	1.77			12.78	1.19	11.82	2.15	12.00	1.97	11.65	2.32	12.20	1.77	12.08	1.89	12.14	1.83	12.00	1.97	12.32	1.65			11.72	2.25
9-101-bldg.	MW-14E	82.10													7.20	6.98	7.55	6.63	7.51	6.67	8.07	6.11	6.83	7.35	7.59	6.59			6.71	7.47
9-101-bldg.	MW-15A	20.70	12.16	2.01	12.51	1.66			11.87	2.30	12.12	2.05	12.22	1.95	11.89	2.28	12.44	1.73	12.31	1.86	12.35	1.82	12.24	1.93	12.52	1.65			11.93	2.24
9-101-bldg.	MW-15C	34.35	12.36	1.81	12.44	1.73			11.49	2.68	12.00	2.17	12.17	2.00	11.85	2.32	12.46	1.71	12.23	1.94	12.50	1.67	12.30	1.87	12.55	1.62			11.91	2.26
9-101-bldg.	MW-15D	51.80													12.02	2.39	12.78	1.63	12.47	1.94	12.68	1.73	12.53	1.88	12.76	1.65			12.14	2.27
9-101-bldg.	MW-16A	20.55	12.81	2.18	13.19	1.80			12.67	2.32	12.84	2.15	12.88	2.11	12.68	2.31	12.98	2.01	12.95	2.04	13.17	1.82	12.53	2.46	13.11	1.88			12.05	2.94
9-101-bldg.	MW-16C	38.30	13.01	2.03	13.33	1.71			12.84	2.20	13.02	2.02	13.04	2.00	12.63	2.41	13.12	1.92	13.13	1.91	13.34	1.70	13.33	1.71	13.23	1.81			12.22	2.82
9-101-bldg.	MW-17A	19.00	12.26	2.54	12.73	2.07	12.84	1.96	12.45	2.35	12.65	2.15	12.63	2.17	12.55	2.25	12.75	2.05	12.80	2.00	13.07	1.73	13.00	1.80	12.80	2.00			12.04	2.76
9-101-bldg.	MW-17C	35.00																												
9-101-bldg.	MW-17D	52.50																												
9-101-bldg.	MW-18A	20.02	11.90	2.40	12.84	1.46	12.43	1.87	12.14	2.16	12.22	2.08	12.25	2.05	12.21	2.09	12.42	1.88	12.37	1.93	12.72	1.58	12.46	1.84	12.45	1.85			11.57	2.73
9-101-bldg.	MW-18C	34.55													12.36	2.27	12.66	1.97	12.67	1.96	12.98	1.65	12.88	1.75	12.74	1.89			11.85	2.78
9-101-bldg.	MW-18D	52.85																												
9-101-bldg.	MW-19A	16.86													10.11	2.12	10.49	1.74	10.47	1.76	10.49	1.74	10.68	1.55	10.55	1.68	9.92	2.31	9.59	2.64
9-101-bldg.	MW-19C	33.92													9.98	2.25	10.44	1.79	10.33	1.90	10.41	1.82	10.59	1.64	10.50	1.73			9.50	2.73
9-101-bldg.	MW-19D	51.86																												
9-101-bldg.	MW-20A	19.34													12.37	1.94	12.56	1.75	12.69	1.62	12.60	1.71	12.76	1.55	12.30	2.01			12.10	2.21
9-101-bldg.	MW-20C	35.32	12.18	1.97	12.76	1.39			12.27	1.88	11.87	2.28	12.06	2.09	11.70	2.45	12.15	2.00	12.13	2.02	12.50	1.65	12.39	1.76	12.28	1.87			11.67	2.48
9-101-bldg.	MW-20D	50.15																												
9-101-bldg.	MW-22A	19.20	12.35	1.90	12.52	1.73			12.14	2.11	12.40	1.85	12.30	1.95	12.04	2.21	12.57	1.68	12.35	1.90	12.50	1.75	12.25	2.00	12.64	1.61	11.90	2.35	12.11	2.14
9-101-bldg.	MW-23A	19.50													11.86	2.41	13.27	1.00	12.67	1.60	12.67	1.60	12.83	1.44	12.90	1.37	12.03	2.24	13.02	1.25
9-101/9-50 bldg.	MW-21A	19.90	12.13	2.32	13.05	1.40	12.67	1.78	12.41	2.04	12.43	2.02	12.45	2.00	12.37	2.08														
9-101/9-50 bldg.	MW-21C	34.00																												
9-64-bldg.	BDC-05-02	25.35	11.81	2.60	12.63	1.78	12.35	2.06	11.81	2.60	12.10	2.31	12.14	2.27	12.05	2.36	12.19	2.22	12.20	2.21	12.28	2.09	12.31	2.06	12.23	2.14			11.53	2.84
9-64-bldg.	BDC-05-03	25.47	11.95	2.46	12.77	1.64			11.94	2.47	12.21	2.20	12.24	2.17	12.11	2.30	12.29	2.12	12.28	2.13	12.47	1.94	12.51	1.90	12.45	1.96			11.75	2.66
9-64-bldg.	BDC-05-04	25.36	12.05	2.54	12.82	1.77			12.03	2.56	12.30	2.29	12.33	2.26	12.22	2.37	12.40	2.19	12.35	2.24	12.58	2.01	12.57	2.02	12.54	2.05			11.85	2.74
9-64-bldg.	BDC-05-05	24.18	11.65	2.79	12.50	1.94			11.61	2.83	11.95	2.49	11.97	2.47	11.89	2.55	12.02	2.42	12.00	2.44	12.18	2.26	12.30	2.14	12.07	2.37			11.51	2.93
9-64-bldg.	BDC-05-07	25.30	11.40	2.59	12.23	1.76			11.42	2.57	11.95	2.04	11.75	2.24	11.95	2.04	11.82	2.17	11.80	2.19	12.02	1.97	12.03	1.96	11.96	2.03			11.27	2.72
9-64-bldg.	BDC-05-08	26.75	12.28	2.39	13.02	1.65			12.20	2.47	12.49	2.18	12.51	2.16	12.39	2.28	12.79	1.88	12.57	2.10										
9-64-bldg.	BDC-05-09	24.55	11.90	2.51	12.68	1.73	12.27	2.13																						
9-64-bldg.	BDC-05-10	24.57	11.95	2.46	12.74	1.67	12.27	2.14																						
9-64-bldg.	BDC-05-11	24.85	12.13	2.52	12.92	1.73	12.60	2.05																						
9-64-bldg.	BDC-05-12	24.87	12.24	2.48	13.00	1.72	12.57	2.15																						
9-64-bldg.	BDC-05-13	24.78	12.02	2.41	12.78	1.65	12.35	2.08																						
9-64-bldg.	BDC-05-14	24.85	11.83	2.39	12.55	1.67	12.23	1.99																						
9-64-bldg.	BDC-05-15	24.48	11.63	2.34	12.34	1.63	11.95	2.02																						
9-64-bldg.	BDC-05-16	24.89	11.78	2.29	12.44	1.63	12.05	2.02																						
9-64-bldg.	BDC-05-17	24.82	11.65	2.60	12.60	1.65	12.27	1.98																						
9-64-bldg.	BDC-05-18	24.69	11.34	2.45	12.10	1.69	11.84	1.95																						
9-64-bldg.	BDC-05-19	24.85	12.15	2.41	12.90	1.66	12.59	1.97																						
9-64-bldg.	BDC-05-20	24.80	12.08	2.26	12.75	1.59	12.47	1.87																						
9-64-bldg.	BDC-05-21	24.86	11.94	2.25	12.59	1.60	12.34	1.85																						
9-64-bldg.	BDC-05-22	25.07	11.87	2.29	12.54	1.62	12.27	1.89																						
9-64-bldg.	BDC-05-23	25.10	12.39	2.07	13.08	1.38	12.79	1.67																						
9-64-bldg.	BDC-05-24	24.73	11.82	2.37	12.59	1.60	12.28	1.91																						
9-60 bldg.	BDC-101	18.42	11.32	3.15	12.46	2.01	12.16	2.31	11.48	2.99	11.92	2.55	11.82	2.65	11.82	2.65	11.89	2.58	11.95	2.52	12.29	2.18	12.22	2.25	12.13	2.34			11.42	3.05
9-60 bldg.	BDC-102	18.83	11.13	3.14	12.16	2.11	11.92	2.35	11.20	3.07	11.67	2.60	11.57	2.70	11.58	2.69	11.64	2.63	11.67	2.60	12.08	2.19	11.86	2.41	11.89	2.38			11.13	3.14
9-60 bldg.	BDC-103	18.51	11.09	3.25	12.20	2.14	11.90	2.44	10.96	3.38	11.63	2.71	11.54	2.80	11.55	2.79	11.61	2.73	11.68	2.66	12.02	2.32	11.93	2.41	11.87	2.47			11.10	3.24
9-60 bldg.	BDC-104	18.90	10.93	3.23	12.00	2.16	11.72	2.44	10.97	3.19	11.45	2.71	11.32	2.84	11.36	2.80	11.40	2.76	11.51	2.65	11.84	2.32								
9-52-bldg.	952MW-1	17.40																												
9-52-bldg.	952MW-2	17.54																												
9-52-bldg.	952MW-3	17.95																												
9-52-bldg. (west)	MW-5	27.43																												
9-04-bldg. (north)	MW-2	26.98																												
9-04-bldg. (north)	MW-7	18.50																												
9-04-bldg. (north)	MW-8	18.50																												
9-04-bldg. (north)	MW-9	18.50																												

Table H-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			August 2006		May 2006		February 2006		November 2005		August 2005		May 2005		February 2005		October 2004		August 2004		May 2004		November 2003		June 2003		December 2002		June 2002	
Well Location / Bldg.	Well ID No.	Well Depth (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)
9-101-bldg.	MW-6A	24.25	13.16	1.64	12.77	2.03	12.42	2.38	12.80	2.00	13.02	1.78	12.52	2.28	12.68	2.12	12.90	1.90	13.06	1.74										
9-101-bldg.	MW-6B	27.20	13.50	1.59	13.09	2.00	12.75	2.34	13.15	1.94	13.35	1.74	12.88	2.21	12.97	2.12	13.25	1.84	13.40	1.69	13.00	1.83	12.88	1.95	13.30	1.53	13.01	1.82	13.21	1.62
9-101-bldg.	MW-6C	40.55	13.41	1.66	13.07	2.00	12.71	2.36	13.14	1.93	13.32	1.75	12.87	2.20	12.90	2.17	13.18	1.89	13.37	1.70	13.14	1.85	13.03	1.96	13.44	1.55	13.16	1.83	13.36	1.63
9-101-bldg.	MW-8C	40.20			13.18	1.74			13.00	1.92			12.64	2.28			12.91	2.01			13.11	1.81	13.11	1.81	13.39	1.53	13.19	1.73	13.27	1.65
9-101-bldg.	MW-9A	21.30	13.05	1.69	13.00	1.74	12.37	2.37	12.73	2.01	13.08	1.66	12.53	2.21	12.51	2.23	12.92	1.82	13.05	1.69	12.82	1.82	12.78	1.86	13.00	1.64	12.90	1.74	12.94	1.70
9-101-bldg.	MW-9B	26.90	12.87	1.72	13.81	0.78	12.19	2.40	12.69	1.90	12.90	1.69	12.17	2.42	10.80	3.79	12.76	1.83	12.90	1.69	12.77	1.95	12.82	1.90	13.08	1.64	12.96	1.76	13.00	1.72
9-101-bldg.	MW-9C	38.80	13.01	1.65	12.91	1.75	12.26	2.40	12.69	1.97	12.93	1.73	12.55	2.11	12.46	2.20	12.87	1.79	13.01	1.65	12.85	1.83	12.77	1.91	13.09	1.59	12.90	1.78	12.94	1.74
9-101-bldg.	MW-9D	56.00			13.15	1.51			12.90	1.76			12.90	1.76			13.92	0.74			12.92	1.74	13.04	1.62	13.39	1.27	13.17	1.49	13.20	1.46
9-101-bldg.	MW-10A	20.20	12.88	1.81	12.98	1.71	11.93	2.76	12.73	1.96	12.85	1.84	12.52	2.17	12.58	2.11	12.95	1.74	13.05	1.64	12.93	1.76	12.83	1.86	13.08	1.61	13.03	1.66	12.94	1.75
9-101-bldg.	MW-10C	40.40			12.88	1.74			12.63	1.99			12.45	2.17			12.74	1.88			12.80	1.82	12.71	1.91	12.97	1.65	12.90	1.72	12.84	1.78
9-101-bldg.	MW-11A	19.90			12.80	2.08			12.92	1.96			12.42	2.46			12.78	2.10			13.12	1.76	12.91	1.97	13.14	1.74	13.13	1.75	12.97	1.91
9-101-bldg.	MW-12A	20.20			12.97	1.86			12.98	1.85			12.58	2.25			12.86	1.97			13.21	1.62	13.00	1.83	13.23	1.60	13.20	1.63	13.03	1.80
9-101-bldg.	MW-13A	19.37			12.48	1.66			12.26	1.88			11.97	2.17			12.35	1.79			12.47	1.67	12.18	1.96	12.49	1.65	12.38	1.76	12.50	1.64
9-101-bldg.	MW-13C	35.62			12.33	1.69			12.10	1.92			11.78	2.24			12.19	1.83			12.35	1.67	12.02	2.00	12.30	1.72	12.22	1.80	12.31	1.71
9-101-bldg.	MW-14A	19.00	12.83	1.54	12.59	1.78	11.95	2.42	12.39	1.98	12.56	1.81	12.35	2.02	12.38	2.09	12.60	1.87	12.94	1.53	12.71	1.76	12.57	1.90	12.91	1.56	12.70	1.77	12.85	1.62
9-101-bldg.	MW-14C	33.30			12.26	1.71			12.13	1.84			11.84	2.13			12.09	1.88			12.16	1.81	12.07	1.90	12.43	1.54	12.18	1.79	12.33	1.64
9-101-bldg.	MW-14E	82.10			8.78	5.40			7.87	6.31			7.29	6.89			7.58	6.60			6.94	7.24	7.26	6.92	8.56	5.62	7.69	6.49	7.64	6.54
9-101-bldg.	MW-15A	20.70			12.05	2.12			12.42	1.75			11.74	2.43			12.17	2.00			12.67	1.50	12.36	1.81	12.57	1.60	12.55	1.62	12.52	1.65
9-101-bldg.	MW-15C	34.35			12.37	1.80			12.50	1.67			12.02	2.15			12.31	1.86			12.72	1.45	12.37	1.80	12.56	1.61	12.47	1.70	12.50	1.67
9-101-bldg.	MW-15D	51.80			12.52	1.89			12.63	1.78			12.20	2.21			12.56	1.85			12.88	1.53	12.64	1.77	12.41	2.00	12.80	1.61	13.02	1.39
9-101-bldg.	MW-16A	20.55			13.04	1.95			13.05	1.94			12.67	2.32			12.97	2.02			13.19	1.80	12.96	2.03	13.35	1.64	13.03	1.96	13.02	1.97
9-101-bldg.	MW-16C	38.30			13.23	1.81			13.22	1.82			12.83	2.21			13.15	1.89			13.38	1.66	13.15	1.89	13.51	1.53	13.33	1.71	13.29	1.75
9-101-bldg.	MW-17A	19.00			12.85	1.95			12.74	2.30							12.81	1.99			13.05	1.75	12.83	1.97	13.10	1.70	12.99	1.81	13.07	1.73
9-101-bldg.	MW-17C	35.00							12.83	2.21							12.80	2.05			13.11	1.74								
9-101-bldg.	MW-17D	52.50							12.82	2.22							12.97	1.90			13.20	1.67								
9-101-bldg.	MW-18A	20.02			12.43	1.87			12.44	1.86			12.11	2.19			12.43	1.87			12.57	1.73	12.36	1.94						
9-101-bldg.	MW-18C	34.55			12.70	1.93			12.72	1.91			12.36	2.27			12.75	1.88			12.84	1.79	12.62	2.01	12.89	1.74	12.82	1.81	12.92	1.71
9-101-bldg.	MW-18D	52.85							12.42	2.21							12.42	1.84			12.60	1.66								
9-101-bldg.	MW-19A	16.86	10.77	1.46	10.44	1.79	10.22	2.01	10.43	1.80	10.70	1.53	10.22	2.01	10.19	2.04	10.54	1.69			10.85	1.38	10.39	1.84						
9-101-bldg.	MW-19C	33.92			10.32	1.91			10.36	1.87			10.22	2.01			10.43	1.80			10.22	2.01	10.31	1.92	10.55	1.68	10.41	1.82	10.71	1.52
9-101-bldg.	MW-19D	51.86							10.69	1.54							10.67	1.56			10.86	1.37								
9-101-bldg.	MW-20A	19.34			12.09	2.22			12.68	1.63			12.33	1.98			12.75	1.56			12.73	1.58	12.58	1.73						
9-101-bldg.	MW-20C	35.32			12.05	2.10			12.30	1.85			11.90	2.25			12.39	1.76			12.66	1.49	12.24	1.91	12.48	1.67	12.26	1.89	12.55	1.60
9-101-bldg.	MW-20D	50.15							12.66	1.49							12.80	1.63			13.17	1.26								
9-101-bldg.	MW-22A	19.20	12.77	1.48	12.41	1.84	12.25	2.00	12.55	1.70	12.81	1.44	12.38	1.87																
9-101-bldg.	MW-23A	19.50	12.94	1.33	12.49	1.78	12.44	1.83	12.78	1.49	13.73	0.54	13.55	0.72																
9-101/9-50 bldg.	MW-21A	19.90			12.68	1.77																					12.79	1.66	12.74	1.71
9-101/9-50 bldg.	MW-21C	34.00																									10.53	1.67	10.52	1.68
9-64-bldg.	BDC-05-02	25.35			12.21	2.16			12.21	2.16			11.86	2.51			12.40	1.97			12.24	2.13	12.08	2.29	12.47	1.90	12.40	1.97	12.25	2.12
9-64-bldg.	BDC-05-03	25.47			12.40	2.01			12.43	1.98			12.07	2.34			12.60	1.81			12.46	1.95	12.28	2.13	12.66	1.75	12.60	1.81	12.47	1.94
9-64-bldg.	BDC-05-04	25.36			12.54	2.05			12.52	2.07			12.17	2.42			12.72	1.87			12.55	2.04	12.40	2.19	12.80	1.79	12.71	1.88	12.57	2.02
9-64-bldg.	BDC-05-05	24.18			12.16	2.28			12.16	2.28			11.87	2.57			12.41	2.03			12.12	2.32	12.13	2.31	12.51	1.93	12.42	2.02	12.22	2.22
9-64-bldg.	BDC-05-07	25.30			11.94	2.05			11.96	2.03			11.59	2.40			12.14	1.85			11.97	2.02	11.81	2.18	12.18	1.81	12.11	1.88	12.02	1.97
9-64-bldg.	BDC-05-08	26.75																												
9-64-bldg.	BDC-05-09	24.55																												
9-64-bldg.	BDC-05-10	24.57																												
9-64-bldg.	BDC-05-11	24.85																												
9-64-bldg.	BDC-05-12	24.87																												
9-64-bldg.	BDC-05-13	24.78																												
9-64-bldg.	BDC-05-14	24.85																												
9-64-bldg.	BDC-05-15	24.48																												
9-64-bldg.	BDC-05-16	24.89																												
9-64-bldg.	BDC-05-17	24.82																												
9-64-bldg.	BDC-05-18	24.69																												
9-64-bldg.	BDC-05-19	24.85																												
9-64-bldg.	BDC-05-20	24.80																												
9-64-bldg.	BDC-05-21	24.86																												
9-64-bldg.	BDC-05-22	25.07																												
9-64-bldg.	BDC-05-23	25.10																												
9-64-bldg.	BDC-05-24	24.73																												
9-60 bldg.	BDC-101	18.42			12.07	2.40			11.91	2.56			11.73	2.74			12.31	2.16			12.04	2.43	12.08	2.39	12.43	2.04	12.34	2.13	12.07	2.40
9-60 bldg.	BDC-102	18.83			11.85	2.42			11.79	2.48			11.53	2.74			11.97	2.30			11.84	2.43	11.82	2.45	12.24	2.03	12.14	2.13	11.82	2.45
9-60 bldg.	BDC-103	18.51			11.78	2.56			11.81	2.53			11.50	2.84			12.08	2.26			11.79	2.55	11.72	2.62	12.27	2.07	12.15	2.19	11.81	2.53
9-60 bldg.	BDC-104	18.90																												
9-52-bldg.	952MW-1	17.40																											11.10	2.38
9-52-bldg.	952MW-2	17.54																											11.37	2.63
9-52-bldg.	952MW-3	17.95																											11.40	2.36
9-52-bldg. (west)	MW-5	27.43																												
9-04-bldg. (north)	MW-2	26.98																			9.96	2.71	9.78	2.89						
9-04-bldg. (north)	MW-7	18.50																			10.90	2.79	10.72	2.97						
9-04-bldg. (north)	MW-8	18.50																			11.10	2.82	10.88	3.04						
9-04-bldg. (north)	MW-9	18.50																			11.03		10.84							

Table H-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			December 2001		June 2001		December 2000		June 2000		November 1999	
Well Location / Bldg.	Well ID No.	Well Depth (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)
9-101-bldg.	MW-6A	24.25										
9-101-bldg.	MW-6B	27.20	12.45	2.38	13.50	1.33	13.55	1.28	13.01	1.82	13.33	1.50
9-101-bldg.	MW-6C	40.55	12.60	2.39	13.67	1.32	13.70	1.29	13.15	1.84	13.50	1.49
9-101-bldg.	MW-8C	40.20	12.89	2.03	13.85	1.07	13.71	1.21	13.13	1.79	13.79	1.13
9-101-bldg.	MW-9A	21.30	12.69	1.95	13.76	0.88	13.72	0.92	12.78	1.86	13.67	0.97
9-101-bldg.	MW-9B	26.90	12.82	1.90	13.90	0.82	13.82	0.90	12.81	1.91	13.90	0.82
9-101-bldg.	MW-9C	38.80	12.61	2.07	13.64	1.04	13.57	1.11	12.75	1.93	13.60	1.08
9-101-bldg.	MW-9D	56.00	12.25	2.41	13.15	1.51	13.03	1.63	12.74	1.92	13.00	1.66
9-101-bldg.	MW-10A	20.20	12.52	2.17	13.52	1.17	13.62	1.07	12.84	1.85	13.50	1.19
9-101-bldg.	MW-10C	40.40	12.32	2.30	13.37	1.25	13.40	1.22	12.74	1.88	13.29	1.33
9-101-bldg.	MW-11A	19.90	12.28	2.60	13.35	1.53	13.52	1.36	12.91	1.97	13.20	1.68
9-101-bldg.	MW-12A	20.20	12.33	2.50	13.35	1.48	13.50	1.33	13.02	1.81	13.21	1.62
9-101-bldg.	MW-13A	19.37	11.92	2.22	12.59	1.55	12.76	1.38	12.50	1.64	12.33	1.81
9-101-bldg.	MW-13C	35.62	11.45	2.57	12.43	1.59	12.69	1.33	12.37	1.65	12.21	1.81
9-101-bldg.	MW-14A	19.00	12.16	2.31	13.00	1.47	12.98	1.49	12.70	1.77	12.78	1.69
9-101-bldg.	MW-14C	33.30	11.60	2.37	12.59	1.38	12.49	1.48	12.17	1.80	12.35	1.62
9-101-bldg.	MW-14E	82.10	6.10	8.08	7.83	6.35	7.44	6.74	7.45	6.73	7.90	6.28
9-101-bldg.	MW-15A	20.70	11.82	2.35	12.66	1.51	12.82	1.35	12.40	1.77	12.35	1.82
9-101-bldg.	MW-15C	34.35	11.73	2.44	12.80	1.37	12.77	1.40	12.36	1.81	12.49	1.68
9-101-bldg.	MW-15D	51.80	11.90	2.51	12.88	1.53	12.90	1.51	12.59	1.82	12.44	1.97
9-101-bldg.	MW-16A	20.55	12.45	2.54	13.55	1.44	13.50	1.49	13.19	1.80	13.34	1.65
9-101-bldg.	MW-16C	38.30	12.62	2.42	13.77	1.27	13.67	1.37	13.36	1.68	13.52	1.52
9-101-bldg.	MW-17A	19.00	12.34	2.46			13.32	1.48	13.05	1.75	13.03	1.77
9-101-bldg.	MW-17C	35.00			13.25	1.60			13.10	1.75	13.05	1.80
9-101-bldg.	MW-17D	52.50			13.20	1.67			13.25	1.62	12.82	2.05
9-101-bldg.	MW-18A	20.02	11.82	2.48	12.61	1.69	12.84	1.46	12.55	1.75	12.38	1.92
9-101-bldg.	MW-18C	34.55			12.87	1.76	13.12	1.51	12.83	1.80	12.61	2.02
9-101-bldg.	MW-18D	52.85			12.58	1.68	12.85	1.41	12.52	1.74	12.33	1.93
9-101-bldg.	MW-19A	16.86	9.93	2.30	10.62	1.61	10.93	1.30	10.68	1.55	10.42	1.81
9-101-bldg.	MW-19C	33.92			10.55	1.68	10.89	1.34	10.65	1.58	10.35	1.88
9-101-bldg.	MW-19D	51.86			11.00	1.23	10.90	1.33	10.71	1.52	11.05	1.18
9-101-bldg.	MW-20A	19.34	12.20	2.11	12.60	1.71	12.89	1.42	12.44	1.87	12.75	1.56
9-101-bldg.	MW-20C	35.32			12.50	1.65	12.69	1.46	12.16	1.99	12.44	1.71
9-101-bldg.	MW-20D	50.15			12.83	1.60	12.87	1.56	12.41	2.02	12.66	1.77
9-101-bldg.	MW-22A	19.20										
9-101-bldg.	MW-23A	19.50										
9-101/9-50 bldg.	MW-21A	19.90	12.05	2.40	12.77	1.68	13.04	1.41	12.93	1.52	12.50	1.95
9-101/9-50 bldg.	MW-21C	34.00	9.87	2.33	10.50	1.70						
9-64-bldg.	BDC-05-02	25.35	11.45	2.92	12.38	1.99	12.56	1.81	12.37	2.00	12.03	2.34
9-64-bldg.	BDC-05-03	25.47	11.70	2.71	12.56	1.85	12.82	1.59	12.56	1.85	12.33	2.08
9-64-bldg.	BDC-05-04	25.36	11.78	2.81	12.69	1.90	12.86	1.73	12.65	1.94	12.33	2.26
9-64-bldg.	BDC-05-05	24.18	11.38	3.06	12.37	2.07	12.53	1.91	12.36	2.08	11.96	2.48
9-64-bldg.	BDC-05-07	25.30	11.18	2.81	12.10	1.89	12.28	1.71	12.08	1.91	11.72	2.27
9-64-bldg.	BDC-05-08	26.75										
9-64-bldg.	BDC-05-09	24.55										
9-64-bldg.	BDC-05-10	24.57										
9-64-bldg.	BDC-05-11	24.85										
9-64-bldg.	BDC-05-12	24.87										
9-64-bldg.	BDC-05-13	24.78										
9-64-bldg.	BDC-05-14	24.85										
9-64-bldg.	BDC-05-15	24.48										
9-64-bldg.	BDC-05-16	24.89										
9-64-bldg.	BDC-05-17	24.82										
9-64-bldg.	BDC-05-18	24.69										
9-64-bldg.	BDC-05-19	24.85										
9-64-bldg.	BDC-05-20	24.80										
9-64-bldg.	BDC-05-21	24.86										
9-64-bldg.	BDC-05-22	25.07										
9-64-bldg.	BDC-05-23	25.10										
9-64-bldg.	BDC-05-24	24.73										
9-60 bldg.	BDC-101	18.42	11.29	3.18	12.30	2.17						
9-60 bldg.	BDC-102	18.83	11.05	3.22	12.06	2.21						
9-60 bldg.	BDC-103	18.51	11.03	3.31	12.04	2.30						
9-60 bldg.	BDC-104	18.90										
9-52-bldg.	952MW-1	17.40	10.21	3.27	11.25	2.23	11.50	1.98			10.97	2.51
9-52-bldg.	952MW-2	17.54	10.46	3.54	11.48	2.52	11.76	2.24			11.25	2.75
9-52-bldg.	952MW-3	17.95	10.52	3.24	11.55	2.21	11.85	1.91			11.28	2.48
9-52-bldg. (west)	MW-5	27.43									10.53	2.42
9-04-bldg. (north)	MW-2	26.98			10.03	2.64			10.19	2.48	9.53	3.14
9-04-bldg. (north)	MW-7	18.50	9.96	3.73	11.05	2.64						
9-04-bldg. (north)	MW-8	18.50	10.08	3.84	11.23	2.69						
9-04-bldg. (north)	MW-9	18.50	10.08		11.23	-11.23						

Notes:

ft = feet

Depth to Water measurements taken from top of well casing.

Top of casing elevation altered in wells MW-6B, MW-6C, MW-9A, MW-9B, and MW-9C by installation of threaded fitting on 6/19/2004.

Top of casing elevation was lowered in well MW-14A by 0.10 ft on 3/17/2005; resurveyed 9/9/05.

Top of casing elevation at wells MS-22A and MW-23A measured 9/9/05.

BDC-05-02 was modified in October 2008 for utilization as an injection well. Elevation changed from 14.37 to 14.41 ft; total depth changed from 25.35 to 25.27.

APPENDIX I

Well Construction Details

Table I-1
Well Construction Details
Boeing Developmental Center
Tukwila, Washington

Location	Well ID	Diameter (inches)	Depth (ft bgs)	Screened Interval (ft bgs)	Slot Size (inches)	Casing Material	Filter Pack	Installation Date	Decommissioning Date	Notes
AOC-01/02	DC-9-52-1	2	17.5	7.5-17.5	0.01	Sch. 40 PVC	10-20 Colorado	Jan-91		
AOC-01/02	DC-9-52-2	2	17.6	7.6-17.6	0.01	Sch. 40 PVC	10-20 Colorado	Jan-91		
AOC-01/02	DC-9-52-3	2	18.1	8.1-18.1	0.01	Sch. 40 PVC	10-20 Colorado	Jan-91		
AOC-01/02	DC-MW-5	2	27.43	--	--	Sch. 40 PVC	--	--		
AOC-03/04	MW-21A	2	20	10-20	0.01	Sch. 40 PVC	10-20 silica	Oct-92		
AOC-03/04	MW-21C	--	34	23.5-33.5	--	--	--	Jun-01		
AOC-05	BDC-01-1	2	20.5	10.5-20.5	0.02	PVC	Sand filter pack	Sep-85	??	
AOC-05	BDC-01-2	2	19	14-19	0.02	PVC	Sand filter pack	Sep-85	??	
AOC-05	BDC-101	2	18.42	7.5-17.5	--	Sch. 40 PVC	--	Jun-01		
AOC-05	BDC-102	2	18.83	8-18	--	Sch. 40 PVC	--	Jun-01		
AOC-05	BDC-103	4	18.51	8-18	--	Sch. 40 PVC	--	Jun-01		
AOC-05	BDC-104	2	18.9	--	--	Sch. 40 PVC	--	Feb-08		
SWMU-17	BDC-05-01	--	--	--	--	--	--	Jun-86		Abandoned after Ecology said no further work required
SWMU-17	BDC-05-02	4	25.35	--	--	Sch. 40 PVC	--	Jun-86		Destroyed, replaced by BDC-05-02A in 1987
SWMU-17	BDC-05-03	2	27.5	7.5-27.5	0.02	Sch. 40 PVC	#8 sand pack	Jun-86		
SWMU-17	BDC-05-04	4	25.36	--	--	Sch. 40 PVC	--	Jan-87		
SWMU-17	BDC-05-05	4	24.18	--	--	Sch. 40 PVC	--	Jan-87		
SWMU-17	BDC-05-06	--	--	--	--	--	--	Jan-87		Abandoned after Ecology said no further work required
SWMU-17	BDC-05-07	4	25.3	--	--	Sch. 40 PVC	--	Mar-87		
SWMU-17	BDC-05-08	2	28	17.5-27.5	0.02	Sch. 40 PVC	2/12 Monterey	Oct-08		
SWMU-17	BDC-05-09	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-10	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-11	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-12	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-13	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-14	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-15	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-16	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-17	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-18	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-19	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-20	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-21	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-22	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-23	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		
SWMU-17	BDC-05-24	2	25.2	15.2-25.2	0.02	Sch. 40 PVC	2/12 Monterey	Jul-11		

Table I-1
Well Construction Details
Boeing Developmental Center
Tukwila, Washington

Location	Well ID	Diameter (inches)	Depth (ft bgs)	Screened Interval (ft bgs)	Slot Size (inches)	Casing Material	Filter Pack	Installation Date	Decommissioning Date	Notes
SWMU-20	MW-6A	2	24	14-24	0.064	Sch. 40 PVC	8-12 Colorado	Aug-89	??	Reinstalled Jun-04
SWMU-20	MW-6B	2	27.5	22-27.5	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-6C	2	40.5	30-40.5	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-7A	2	20.5	10-20.5	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-7C	2	40.5	30-40.5	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-8A	2	20.5	10-20.5	--	FRE	--	Aug-89	Dec-89	
SWMU-20	MW-8C	2	40.5	30-40.5	--	FRE	--	Aug-89		
SWMU-20	MW-9A	2	21.5	11-21.5	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-9B	2	27	22-27	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-9C	2	39.5	29-39.5	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-9D	2	56	41-56	0.01	FRE	10-20 Colorado	Aug-89		
SWMU-20	MW-10A	2	20	15-20	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-10C	2	40.5	30-40.5	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-11A	2	20	9.5-20	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-12A	2	20.5	10-20.5	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-13A	2	20	9.5-20	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-13C	2	36	25.5-36	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-14A	2	19.5	9-19.5	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-14C	2	34	23.5-34	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-14E	2	82	77-82	0.01	Sch. 40 PVC	10-20 Colorado	Jan-91		
SWMU-20	MW-15A	2	21.5	11-21.5	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-15C	2	35	24.5-35	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-15D	2	52	41.5-52	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-16A	2	20.5	10-20.5	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-16C	2	38.5	28-38.5	0.01	Sch. 40 PVC	10-20 Colorado	Aug-89		
SWMU-20	MW-17A	2	19.9	9.5-19.5	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-17C	2	34.8	24.4-34.4	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-17D	2	52.4	42-52	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-18A	2	21.5	11.5-21.5	0.01	Sch. 40 PVC	10-20 silica	Feb-91	Jul-92	Reinstalled Oct-92
SWMU-20	MW-18C	2	36	26-36	0.01	Sch. 40 PVC	10-20 silica	Feb-91	Jul-92	Reinstalled Oct-92
SWMU-20	MW-18D	2	53.6	43.6-53.6	0.01	Sch. 40 PVC	10-20 silica	Feb-91	Jul-92	Reinstalled Oct-92
SWMU-20	MW-19A	2	16.9	6.5-16.5	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-19C	2	34.9	24.5-34.5	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-19D	2	51.9	41.5-51.5	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-20A	2	18.9	8.5-18.5	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-20C	2	34.9	24.5-34.5	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-20D	2	50.4	40-50	0.01	Sch. 40 PVC	10-20 Colorado	Feb-91		
SWMU-20	MW-22A	2	19.7	9.5-19.5	0.01	Sch. 40 PVC	10-20 Colorado	Mar-05		
SWMU-20	MW-23A	2	20	10-20	0.01	Sch. 40 PVC	10-20 Colorado	Mar-05		

Table I-1
Well Construction Details
Boeing Developmental Center
Tukwila, Washington

Location	Well ID	Diameter (inches)	Depth (ft bgs)	Screened Interval (ft bgs)	Slot Size (inches)	Casing Material	Filter Pack	Installation Date	Decommissioning Date	Notes
Bldg 9-53	DC-9-53-1	2	18.7	13.3-18.3	0.01	Sch. 40 PVC	10-20 sand	Dec-89		
Bldg 9-53	DC-9-53-2	2	19	13.5-18.5	0.01	Sch. 40 PVC	10-20 sand	Dec-89		
Museum of Flight	DC-MW-2	2	28	18-28	0.02	PVC	Sandpack	Aug-85	??	
Museum of Flight	DC-MW-7	2	18.5	8-18	0.01	Sch. 40 PVC	10-20 Colorado	Apr-01	??	
Museum of Flight	DC-MW-8	2	18.5	8-18	0.01	Sch. 40 PVC	10-20 Colorado	Apr-01	??	
Museum of Flight	DC-MW-9	2	18.5	8-18	0.01	Sch. 40 PVC	10-20 Colorado	Jul-01	??	

Abbreviations and Acronyms:

AOC = Area of Concern
bgs = below ground surface
Bldg = building
Ecology = Washington State Department of Ecology
FRE = fiberglass reinforced epoxy
ft = feet
ID = identification
PVC = polyvinyl chloride
Sch. = Schedule
SWMU = Solid Waste Management Unit

Notes:

Information presented in this table has been retrieved directly from boring logs. Notation, terminology, etc. reflects best available information.

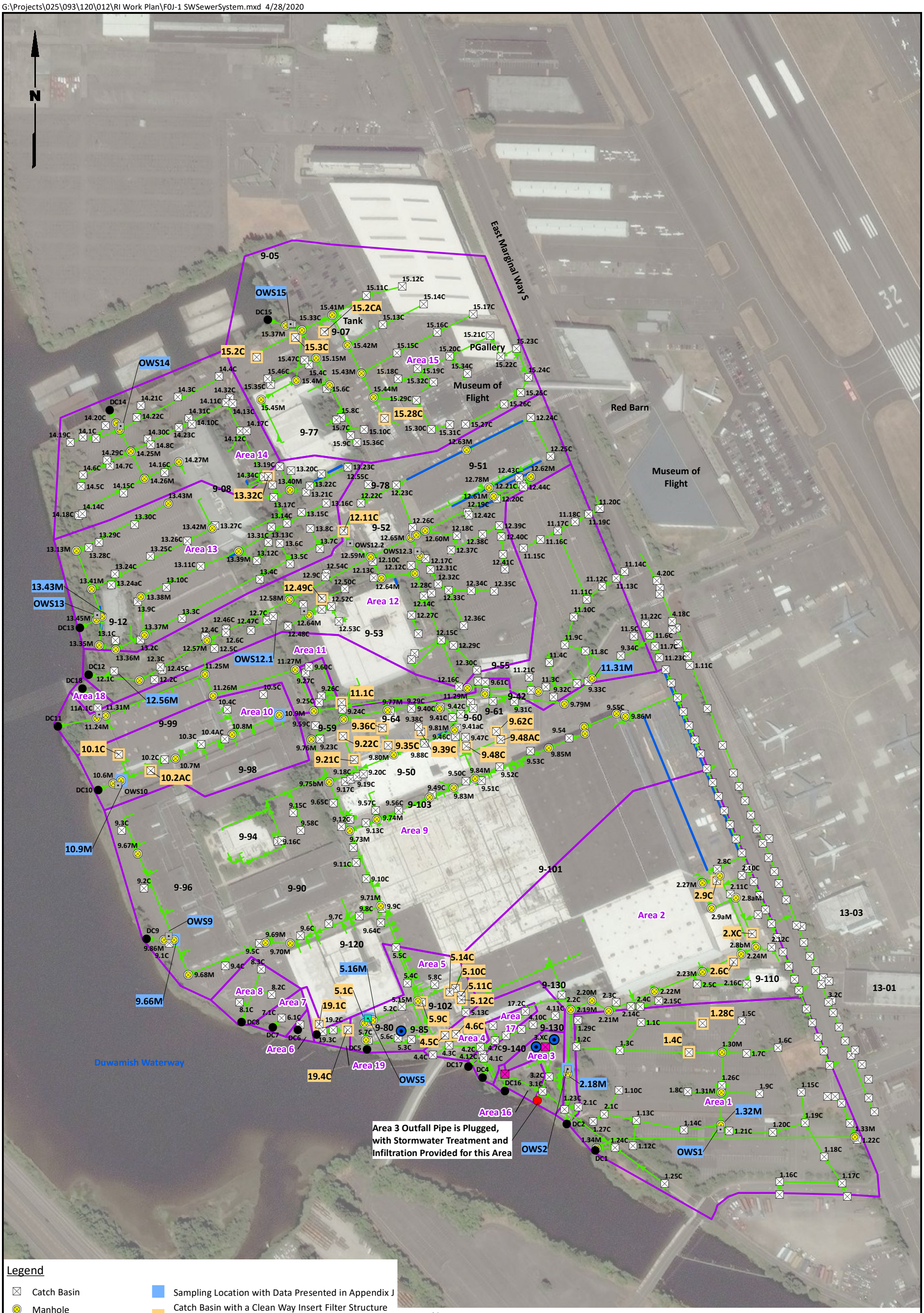
-- = information not available
?? = available information suggests well has been decommissioned or abandoned, but date cannot be confirmed
(blank) = information available, but not confirmed with boring logs

APPENDIX J

Report Excerpts—Stormwater and Stormwater System Solids Sampling Data

- Figure J-1. Stormwater Sewer System, Previous Sampling Locations
- Appendix J-1. Draft, Data Summary of PCB Sampling from Accumulated Solids and Construction Materials In and Around Storm Sewer Lines at the Developmental Center (Project Performance Corporation, 2001)
- Appendix J-2. Summary of Data from PCB Sampling Associated with Oil/Water Separators at the Developmental Center (Boeing, 2003)
- Appendix J-3. Data Report: Stormwater Lateral Loading Study, Lower Duwamish Waterway, WA (Science Applications International Corporation and NewFields, 2011)
- Appendix J-4. Lower Duwamish Water: NPDES Inspection Sampling Support 2014/2015 (Leidos, 2015)
- Appendix J-5. Sampling Report: Summary of PCB Source Tracing Within the Boeing Developmental Center (CALIBRE Systems, 2017)
- Appendix J-6. 2016 and 2017 Annual Sampling Report, South Storm Drain System and Source Tracing Within the Boeing Developmental Center (CALIBRE Systems, 2018)

G:\Projects\025\093\120\012\RI Work Plan\F0J-1 SWSewerSystem.mxd 4/28/2020



Legend

- Catch Basin
- Manhole
- Oil/Water Separator
- Outfall
- Outfall (Plugged)
- Roof Downspout Filter Box
- Sampling Location with Data Presented in Appendix J
- Catch Basin with a Clean Way Insert Filter Structure with Filter Element Containing MetalZorb™
- Bulk MetalZorb™ Media
- Mesh Bag Filter with MetalZorb™
- Drainage Trench
- Storm Drain Line
- Drainage Areas

Notes

1. Locations of storm drain features are approximate.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 300 600

Scale in Feet

LANDAU ASSOCIATES

Data Sources: Boeing; Esri World Imagery.

Boeing Developmental Center
Tukwila, Washington

Stormwater Sewer System: Previous Sampling Locations

Figure
J-1

APPENDIX J-1

Draft, Data Summary of PCB Sampling from Accumulated Solids and Construction Materials In and Around Storm Sewer Lines at the Developmental Center (Project Performance Corporation, 2001)

DRAFT

DATA SUMMARY OF PCB SAMPLING FROM ACCUMULATED SOLIDS AND CONSTRUCTION MATERIALS IN AND AROUND STORM SEWER LINES AT THE DEVELOPMENTAL CENTER

prepared for:
The Boeing Company
Energy and Environmental Affairs
Seattle, Washington

prepared by:
Project Performance Corporation
16935 SE 39th St
Bellevue, Washington

May 30, 2001

Table 3 Analytical Results from Phase I Sampling

Sample ID	Location	Initial analysis (July 7, 2000) Aroclor 1254 concentration	Split analysis (August 7, 2000) Aroclor 1254 concentration
CB-1	1st catch basin up stream from outfall	510 mg/kg	0.3 mg/kg
CB-1-D (field duplicate from CB-1)	1st catch basin up stream from outfall	0.64 mg/kg	non detect at 0.3 mg/kg
MH-2	1st manhole up stream from outfall	760 mg/kg	870 mg/kg
MH-3	2nd manhole up stream from outfall (in intersection)	0.19 mg/kg	1,100 mg/kg
CB-4	Catch basin next to 9-101 (adjacent to fire hydrant)	1.2 mg/kg	1.5 mg/kg
MH-5	3rd manhole up stream from outfall (in landscaped area)	44 mg/kg	39 mg/kg

The analytical results indicated some sampling locations contained high levels of Aroclor 1254. The initial reporting of laboratory results indicated that the field duplicate differed from the baseline sample by more than 2 orders of magnitude. Based on this large variability, the laboratory (CAS) was requested to re-extract and re-analyze all of the samples in a subsequent split analysis of each sample. This subsequent split analysis continued to show large variability (up to 3 orders of magnitude) in analytical results from split samples.

The results of duplicate/split sample analyses indicate a highly heterogeneous distribution of Aroclor 1254 in the samples collected from the storm sewer system. The results of the initial and split analyses of samples from CB-1-D, MH-2, CB-4 and MH-5 are generally consistent. The results from the analysis of duplicate samples CB-1 and CB-1-D show very high variability (approximately 3 orders of magnitude). The results of the initial and split analyses of the sample from MH-3 show very high variability (greater than 3 orders of magnitude). The source of this large variability in results of analysis of duplicate/split samples is expected to be the result of heterogeneous, highly concentrated "nuggets" within the solids samples. In discussions with analytical laboratory staff, chemists indicated that it is common for PCBs in environmental solids to exhibit a distinct heterogeneous nugget effect because of the strong partitioning of PCBs to organic matter and the common use of PCBs at high concentrations in a variety of materials (caulking, paint, oils, etc.).

Review of the laboratory quality assurance/quality control (QA/QC) summaries indicates that the surrogate recoveries and lab control samples (LCS) were within the laboratory acceptance limits set by CAS. The matrix spikes (MS) and duplicate matrix spikes (DMS) were influenced by high levels of the Aroclor 1254 present in the samples.

3.2 Analytical Results from Phase II Sampling

A summary of the analytical results from the Phase II sampling are presented in Table 4.

The solids sample collected from the catch basin closest to the electrical transformer indicated no PCBs were present at the analytical detection limits. The solids sample collected from the catch basin next to the electrical vault indicated low levels of Aroclor 1254 (~ 2 mg/kg).

None of the samples collected in the Phase III sampling indicated PCBs high enough to cause the nugget effect observed in some of the Phase I sampling results.

Table 5 Analytical Results from Phase III Sampling

Phase III Sample identification from October 27, 2000					
Sample ID	Area/material	Description	Location	Concentration mg/kg	Specific Aroclor
MH-6	Manhole# 6/water sample	Water sample with small amount of solids	South end of 9-101, next manhole upstream from MH-5	0.0042 mg/L	1248
West trench	Solids from front of 9-101 bldg (east side)	Solids	South end of west trench drain in front of 9-101	3.7	1254
9-110 catch basin	Catch basin west of 9-110 bldg	Organic sludge/solids	CB west of 9-110 bldg closest catch basin to electric transformer	ND @ 2.60	1254
Catch basin 7	Catch basin on south side of 9-101 bldg	Organic sludge/solids	Catch basin on south side of 9-101 bldg, next to electrical vault	1.90 J	1254
9-110 roof	9-110 roof material	Tar like roof material	From roof material (hot tar) at down spout	ND @ 0.990	1254
Trench drain east	Solids from front of 9-101 bldg (east side)	Solids	South end of east trench drain in front of 9-101 (on Marginal Way)	ND @ 1.50	1254
Q-20	9-101 roof ,row Q column 20	Soil accumulation on roof	Roof of 9-101	ND @ 1.30	1254
W-20	9-101 roof, row W column 20	Soil accumulation on roof	Roof of 9-101	ND @ 2.60	1254
High bay DS	9-101 roof	Roofing material	SE corner	1.40	1248
Annex SD soil	9-101 roof	Soil accumulation on roof	DS on S edge of annex (to the west end)	ND @ 2.0	1254
Annex DS	9-101 roof	Roofing material	DS on S edge of annex (to the west end)	2.10	1248
Roof P-21	9-101 roof, row P column 21	Roofing material		28.0	1248
T-19	9-101 roof, row T column 19	Roofing material		0.660 J	1248

3.4 Analytical Results from Phase IV Sampling

The analytical results from the Phase IV sampling are presented in Table 6. The data validation is presented in Appendix A and the laboratory data summary is presented in Appendix B. Review of the laboratory QA/QC summaries indicates that the surrogate recoveries, LCS, MS and DMS results were within the laboratory acceptance limits set by ARI.

Table 6 Analytical Results from Phase IV Sampling

Sample ID/ date	Area	description	PCB concentration	units
Outfall 3/1 3/1/01	outfall	discharge as first flush	all Aroclors below detection limit of 1	ug/L
Outfall 3/23 3/23/01	outfall	discharge at low flow condition	all Aroclors below detection limit of 1, 1254 "J" flagged (estimated) at 0.86	ug/L
yellow paint 5/2/01	drainage to catch basin 1	road stripping paint	all Aroclors below detection limit of 1	mg/kg
while paint 5/2/01	drainage to catch basin 1	road stripping paint	all Aroclors below detection limit of 0.99	mg/kg

The two water samples collected at the outfall discharge were both below the method detection limits. The "first flush" sample at a flow rate of approximately 15 gpm was reported as non detect (at a PCB detection limit of 1 ug/l). The second water sample collected at a low flow condition of approximately 0.5 gpm was reported as a "J" flagged sample with an estimated Aroclor 1254 concentration of 0.86 ug/L which is below the method detection limit of 1 ug/L.

Both of the paint samples collected in the Phase IV sampling indicated PCBs below the method detection limits (~ 1 mg/kg).

4.0 Conclusions

The following are conclusions related to the results of the of sampling and analysis:

- PCBs were detected in some solids samples from manholes and catch basins upstream from the outfall. The results showed high variability between duplicates and splits, indicating a highly heterogenous distribution of PCBs in the samples.

- Analysis of potential sources of PCBs in building and construction materials did not identify PCBs at levels of concern. None of the materials sampled contained PCBs at concentrations detected in the "nuggets" observed in the Phase I solids samples. PCB results for these

APPENDIX J-2

Summary of Data from PCB Sampling Associated with Oil/Water Separators at the Developmental Center (Boeing, 2003)

January 23, 2003
G-1241-JNB-014

Mr. Byung Maeng
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue WA 98008-5452

Subject: Summary of Data from PCB Sampling Associated with Oil/Water Separators at the Developmental Center

Sampling for PCBs was conducted at oil-water separators located at the Boeing Developmental Center during August and September 2002. As requested during the October 9, 2002 meeting between Boeing, Ecology, and EPA, sample results have undergone a data quality review and assessment. Results of the data quality assessment, together with data summary tables, a sample location map, and laboratory data packages are provided in the attached documents. Also enclosed is an update to our Quality Assurance Plan for the DC. The main purpose of the update is to provide a standard operating procedure for collection of sediment samples from oil/water separators so that more representative samples are collected.

If you have any questions or would like to discuss any of the information further, please call or e-mail me.

James Bet
SSG Environmental Remediation
PO Box 3707 M/C 1W-12
Seattle WA 98124-2207
206-679-0433

Enclosures: Cover letter from Project Performance Corporation to Boeing
Data Quality Review/Assessment, Sampling and Analysis for PCBs in Storm Water System Oil/Water Separators
ARI Laboratory data packages

Quality Assurance Project Plan for Environmental Sampling

cc: Rick Thomas Department of Ecology (with enclosures)
Steve Ryan Boeing Seattle A&M SHEA Manager (without enclosures)

for extraction and 40 days for analysis. Two of the samples (D2117-A and D2116-S) had raised reporting limits due to matrix interference and were qualified with a “Y”.

Results of the analysis of both method blanks performed at ARI showed all PCBs below the method detection level. The laboratory control performed at ARI and all surrogate recoveries were within allowable limits.

The results received from ARI are valid and may be used for any purpose.

Table 1 lists the chronology of the samples included in this data quality assessment. Table 2 shows the analytical results of the aqueous samples. Table 3 shows the analytical results of the soil/sediment samples. Table 4 shows the analytical results of the waste characterization samples. The sampling locations are shown in the attached figure (titled Developmental Center Stormwater Drainage Map).

Table 1. Sample Activity Chronology

Sample Number	Laboratory	Date Sampled	Date Extracted	Date Analyzed
MFC2S-A	EAL	28 Aug 02	12 Sep 02	14 Sep 02
MFC2S-S	EAL	28 Aug 02	uncertain	uncertain
MFC1S-A	EAL	28 Aug 02	12 Sep 02	14 Sep 02
DC5S-A	EAL	28 Aug 02	12 Sep 02	14 Sep 02
DC1S-A	EAL	28 Aug 02	12 Sep 02	14 Sep 02
DC1S-S	EAL	28 Aug 02	uncertain	uncertain
DC10S2-A	EAL	26 Aug 02	12 Sep 02	14 Sep 02
DC12S1-A	EAL	26 Aug 02	12 Sep 02	14 Sep 02
DC12S1-S	EAL	26 Aug 02	uncertain	Uncertain
DC9S1-A	EAL	26 Aug 02	12 Sep 02	14 Sep 02
DC9S1-S	EAL	26 Aug 02	uncertain	uncertain
DC12S-2-A	EAL	26 Aug 02	12 Sep 02	14 Sep 02
DC13S-A	EAL	19 Sep 02	30 Sep 02	1 Oct 02
DC10S-2-A	EAL	19 Sep 02	30 Sep 02	1 Oct 02
DC10S-1-SL	EAL	19 Sep 02	30 Sep 02	1 Oct 02
DC10S-1-SL	ARI	19 Sep 02	19 Sep 02	23 Sep 02
DC10S(1)-SL	ARI	28 Sep 02	1 Oct 02	2 Oct 02
DC10S(2)-SL	ARI	28 Sep 02	1 Oct 02	2 Oct 02
DC10S(3)-SL	ARI	28 Sep 02	1 Oct 02	2 Oct 02
DC10S(4)-SL	ARI	28 Sep 02	1 Oct 02	2 Oct 02
D2116-S	ARI	30 Sep 02	1 Oct 02	2 Oct 02
D2117-A	ARI	30 Sep 02	30 Sep 02	1 Oct 02
D2118-A	ARI	30 Sep 02	30 Sep 02	1 Oct 02

Table 2. Analytical Results of Aqueous Samples

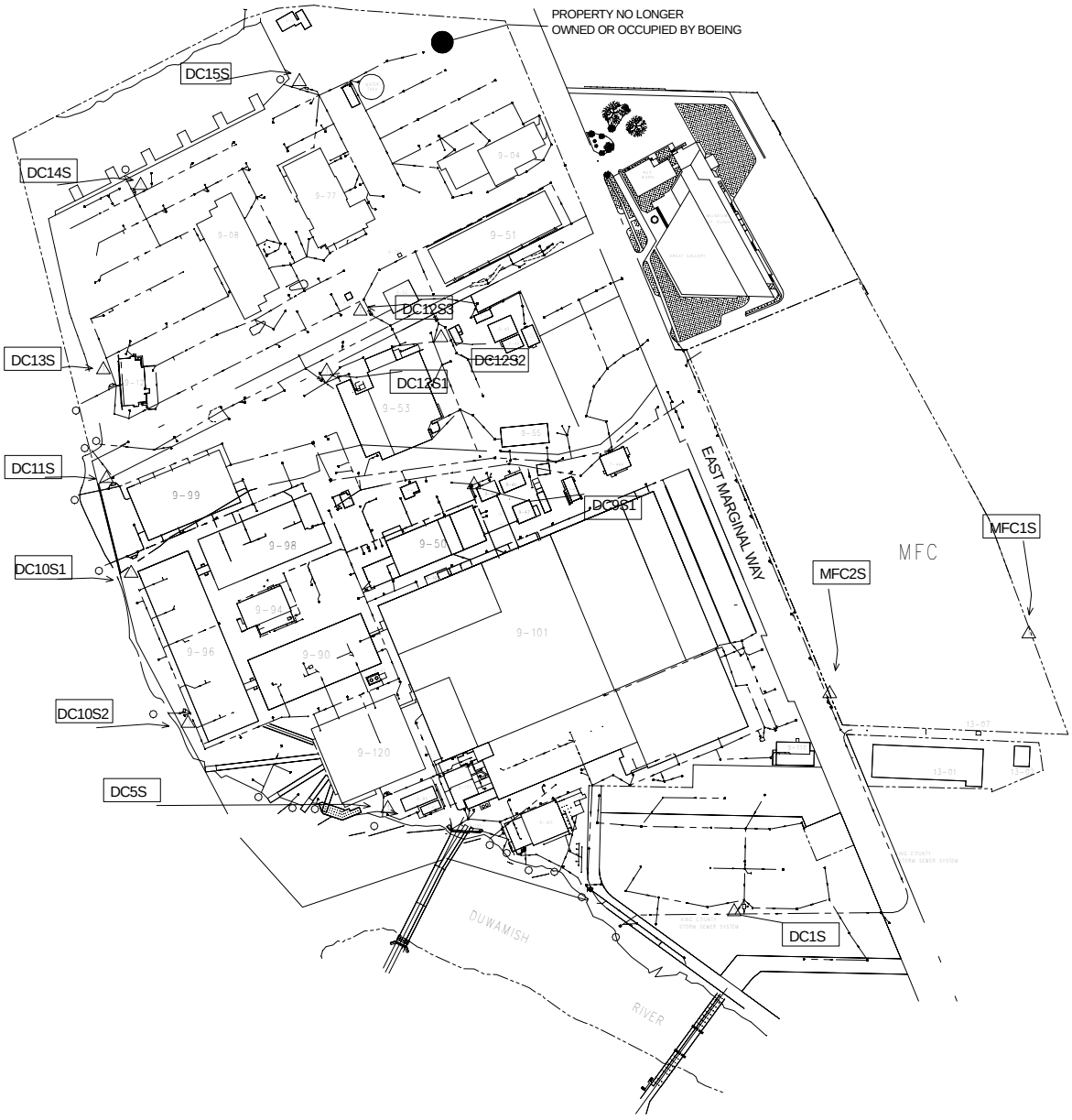
Sample Number	Laboratory	Sample Date	Aroclor 1242 (ug/L)	Aroclor 1248 (ug/L)	Aroclor 1254 (ug/L)	Aroclor 1260 (ug/L)	Total PCBs (ug/L)
MFC2S-A	EAL	28 Aug 02	<0.2 U E	<0.2 U E	0.2 E	<0.2 U E	0.2 E
MFC1S-A	EAL	28 Aug 02	0.4 E	<0.2 U E	0.2 E	<0.2 U E	0.6 E
DC5S-A	EAL	28 Aug 02	<0.2 U E	0.8 E	0.2 E	<0.2 U E	1.0 E
DC1S-A	EAL	28 Aug 02	<0.2 U E	<0.2 U E	<0.2 U E	<0.2 U E	<0.2 U E
DC10S2-A	EAL	26 Aug 02	3.8 E	<0.2 U E	0.6 E	<0.2 U E	4.4 E
DC12S1-A	EAL	26 Aug 02	<0.2 U E	<0.2 U E	<0.2 U E	<0.2 U E	<0.2 U E
DC9S1-A	EAL	26 Aug 02	<0.2 U E	<0.2 U E	<0.2 U E	<0.2 U E	<0.2 U E
DC12S-2-A	EAL	26 Aug 02	<0.2 U E	<0.2 U E	0.4 E	<0.2 U E	0.4 E
DC13S-A	EAL	19 Sep 02	<1.4 E	<1.4 E	<1.4 E	<1.4 E	<1.4 E
DC10S-2-A	EAL	19 Sep 02	<1.4 E	<1.4 E	<1.4 E	<1.4 E	<1.4 E

Table 3. Analytical Results of Sludge/sediment Samples

Sample Number	Laboratory	Sample Date	Aroclor 1242 (ug/Kg)	Aroclor 1248 (ug/Kg)	Aroclor 1254 (ug/Kg)	Aroclor 1260 (ug/Kg)	Total PCBs (ug/Kg)
MFC2S-S	EAL	28 Aug 02	<380 U E	11,000 E	5,700 E	<380 U E	16,700 E
DC1S-S	EAL	28 Aug 02	<40 U E	<40 U E	520 E	<40 U E	520 E
DC12S1-S	EAL	26 Aug 02	<57 U E	<57 U E	340 E	<57 U E	340 E
DC9S1-S	EAL	26 Aug 02	<29 U E	<29 U E	1,400 E	<29 U E	1,400 E
DC10S-1-SL	EAL	19 Sep 02	<26 U	<26 U	2,900	28,000	30,900
DC10S-1-SL split	ARI	19 Sep 02	<5,000 U	<5,000 U	<5,000 U	5,500	5,500
DC10S(1)-SL	ARI	28 Sep 02	<1,700 U D	<1,700 U D	4,900 D	4,800 D	9,700 D
DC10S(2)-SL	ARI	28 Sep 02	<1,400 U D	<1,400 U D	3,600 D	3,800 D	7,400 D
DC10S(3)-SL	ARI	28 Sep 02	<1,100 U D	<1,100 U D	3,000 D	2,900 D	5,900 D
DC10S(4)-SL	ARI	28 Sep 02	<1,600 U D	<1,600 U D	4,500 D	4,900 D	9,400 D

Table 4. Analytical Results of Waste Characterization Samples

Sample Number	Laboratory	Sample Date	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs
D2116-S	ARI	30 Sep 02	<1,100 U D (ug/Kg)	<1,100 U D (ug/Kg)	8,700 D (ug/Kg)	3,700 Y D (ug/Kg)	12,400 Y D (ug/Kg)
D2117-A	ARI	30 Sep 02	1.0 U (ug/L)	1.0 U (ug/L)	3.9 Y (ug/L)	4.7 (ug/L)	8.6 Y (ug/L)
D2118-A	ARI	30 Sep 02	1.0 U (ug/L)	1.0 U (ug/L)	1.0 U (ug/L)	1.0 U (ug/L)	1.0 U (ug/L)



DC15S — △ OIL/WATER SEPARATOR (STORM)

■ CATCH BASINS

DEVELOPMENTAL CENTER
STORMWATER DRAINAGE MAP

BOEING

N

APPROXIMATE SCALE IN FEET

0 400' 800'

APPENDIX J-3

Data Report: Stormwater Lateral Loading Study, Lower Duwamish Waterway, WA (Science Applications International Corporation and NewFields, 2011)

Stormwater Lateral Loading Study
Lower Duwamish Waterway, WA

Data Report

Prepared for

Washington State Department of Ecology
Toxics Cleanup Program
Northwest Regional Office
Bellevue, Washington

Prepared by

Science Applications International Corporation
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

and

NewFields
115 2nd Ave N, Suite 100
Edmonds, WA 98020

December 2011

Figure 5. Boeing Developmental Center Storm Drain Sub-basin and Outfall Location (2088)

Table 8. Maximum Concentration of Filtered Solids Samples that Exceed SMS/LAET Criteria

Analyte	SQS/LAET	CSL/2LAET	Base Flow				Stormwater							
			NF2095	n[1]	PS2220	n[1]	NF2095	n[1]	KC2062	n[1]	PS2220	n[1]	BDC2088	n[1]
PCBs (mg/kg)														
Total PCBs	0.13	1					**0.33**	3/3	**0.32**	2/3			**0.82**	3/3
Metals – Total (mg/kg)														
Cadmium	5.1	6.7	**6**	1/2			**8**	2/4	**9**	2/4				
Zinc	410	960	**840**	1/2	**2040**	1/1	**1530**	4/4	**2090**	4/4	**1880**	3/3	**1520**	1/1
PAHs (mg/kg)														
2-Methylnaphthalene	0.67	1.4											**1.4**	1/3
Acenaphthene	0.5	0.73									**1.1**	3/3	**1.2**	1/3
Anthracene	0.96	4.4			**1.2**	1/2					**3.9**	2/3	**2.4**	1/3
Benzo(a)anthracene	1.3	1.6			**2.0**	1/2			**1.4**	1/4	**6.6**	2/3	**15**	3/3
Benzo(a)pyrene	1.6	3					**2.3**	1/4	**2.4**	2/4	**3.3**	1/3	**21**	3/3
Benzo(ghi)perylene	0.67	0.72			**1.4**	1/2	**3.2**	3/4	**2.3**	3/4	**1.6**	2/3	**19**	3/3
Benzofluoranthene	3.2	3.6			**4.3**	1/2	**6.4**	1/4	**7.8**	2/4	**9.4**	2/3	**49**	3/3
Chrysene	1.4	2.8			**4.3**	1/2	**3.7**	1/4	**4.8**	3/4	**7.4**	3/3	**28**	3/3
Dibenzofuran	0.54	0.7									**1.4**	2/3	**1.8**	2/3
Fluoranthene	1.7	2.5			**9.9**	1/2	**5.0**	2/4	**6.4**	3/4	**23**	3/3	**45**	3/3
Fluorene	0.54	1									**3.3**	3/3	**1.6**	2/3
Indeno(1,2,3-cd)pyrene	0.6	0.69					**2.5**	2/4	**2.2**	3/4	**1.5**	2/3	**16**	3/3
Naphthalene	2.1	2.4											**2.6**	1/3
Phenanthrene	1.5	5.4			**2.3**	1/2	**2.1**	1/4	**3.7**	3/4	**15**	3/3	**25**	3/3
Pyrene	2.6	3.3			**8.3**	1/2	**3.7**	1/4	**5.6**	2/4	**14**	3/3	**34**	2/3
Total HPAHs	12	17			**31**	1/2	**28**	1/4	**33**	3/4	**66**	3/3	**230**	3/3
Total LPAHs	5.2	13									**23**	3/3	**33**	2/3

1. (Number of samples exceeding criteria)/(Total sample number)

Light yellow shading - SQS/LAET criteria exceeded

Light blue shading - CSL/2LAET criteria exceeded

SQS/LAET - Sediment Quality Standards/Lowest Apparent Effects Threshold

CSL/2LAET - Cleanup Screening Level/Second Lowest Apparent Effects Threshold

Total HPAHs - Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Pyrene

Total LPAHs - Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, Phenanthrene

Total PCBs - Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260

Table 10. Sediment Trap Solids Samples that Exceed SMS/LAET Criteria

Analyte	SQS/LAET	CSL/2LAET	NF2095	KC2062	PS2220	BDC2088
Phenols (mg/kg)						
Phenol	0.42	1.2				**0.49**
Phthalates (mg/kg)						
Bis(2-Ethylhexyl) Phthalate	1.3	1.9	**2.3**		**13**	**6.3**
Butyl benzyl phthalate	0.063	0.9	**1.8**		**1.0**	**0.38**
Di-n-Octyl phthalate	6.2					**7.3**
PAHs (mg/kg)						
Acenaphthene	0.50	0.73			**1.6**	
Anthracene	0.96	4.4			**4.3**	**1.3**
Benzo(a)anthracene	1.3	1.6		**1.6**	**5.5**	**7.8**
Benzo(a)pyrene	1.6	3.0		**1.8**	**2.5**	**9.3**
Benzo(ghi)perylene	0.67	0.72		**1.5**	**2**	**7.2**
Benzofluoranthene	3.2	3.6		**4.4**	**7**	**20**
Chrysene	1.4	2.8		**2.6**	**7.4**	**14**
Dibenzo(a,h)anthracene	0.23	0.54		**0.47**	**0.74**	**2.6**
Dibenzofuran	0.54	0.70			**2**	
Fluoranthene	1.7	2.5		**6.2**	**37**	**33**
Fluorene	0.54	1.0			**3.9**	
Indeno(1,2,3-cd)pyrene	0.60	0.69		**1.3**	**1.5**	**6.9**
Phenanthrene	1.5	5.4		**2.5**	**24**	**13**
Pyrene	2.6	3.3		**3.9**	**20**	**19**
Total HPAHs	12	17		**24**	**84**	**120**
Total LPAHs	5.2	13			**34**	**15**
SVOCs (mg/kg)						
Benzoic Acid	0.65	0.65				**1.2**
Benzyl Alcohol	0.057	0.073	**0.12**			**0.31**

Light yellow shading - SQS/LAET criteria exceeded

Light blue shading - CSL/2LAET criteria exceeded

SQS/LAET - Sediment Quality Standards/Lowest Apparent Effects Threshold

CSL/2LAET - Cleanup Screening Level/Second Lowest Apparent Effects Threshold

Total HPAHs - Benzo(a)anthracene, Benzo(a)pyrene, Benzo(g,h,i)perylene, Benzofluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Pyrene

Total LPAHs - Acenaphthene, Acenaphthylene, Anthracene, Fluorene, Naphthalene, Phenanthrene

Table 11. Inline Solids Samples that Exceed SMS/LAET Criteria

Analtye	SQS/LAET	CSL/2LAET	KC2062
Metals – Total (mg/kg)			
Arsenic	57	93	**90**
Cadmium	5.1	6.7	**6**
Zinc	410	960	**640**
PAHs (mg/kg)			
Benzo(ghi)perylene	0.67	0.72	**1.2**
Dibenzo(a,h)anthracene	0.23	0.54	**0.33**
Fluoranthene	1.7	2.5	**1.8**
Indeno(1,2,3-cd)pyrene	0.6	0.69	**1.1**

Light yellow shading - SQS/LAET criteria exceeded

Light blue shading - CSL/2LAET criteria exceeded

SQS/LAET - Sediment Quality Standards/Lowest Apparent Effects Threshold

CSL/2LAET - Cleanup Screening Level/Second Lowest Apparent Effects Threshold

APPENDIX J-4

Lower Duwamish Water: NPDES Inspection Sampling Support 2014/2015 (Leidos, 2015)

Lower Duwamish Waterway

NPDES Inspection Sampling Support 2014/2015

Prepared for

Toxics Cleanup Program
Northwest Regional Office
Washington State Department of Ecology
Bellevue, Washington

Prepared by

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June 2015

Appendix R
Boeing Developmental Center

Table R-2. Water Quality Data - Field Measurements
Boeing Developmental Center

		Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
		Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
Analyte	**ISGP Benchmark**	**Units**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Field Parameters								
Flow	--	Yes/No	No	No	No	No	No	No
pH	5.0 to 9.0	std units	6.3	5.9	6.0	6.0	**9.3**	6.1
Conductivity	--	mS/cm	0.05	0.59 a	3.7 b	0.80	0.10 a	1.1
Temperature	--	degrees C	10.1	7.6	7.3	10.0	9.5	9.3
Total Dissolved Solids	--	mg/L	29	379	2,380	511	65	696
Turbidity	25	NTU	**121**	7.0	3.0	2.8	1.6	2.5
Oil & Grease	No visible sheen	Yes/No	No	No	No	No	No	No
Dissolved Oxygen	--	mg/L	7.4	23	14	9.1	17	11
ORP	--	mV	192	208	159	217	125	172

Results in **bold** exceed the ISGP benchmark.

a - Field form incorrectly lists units as S/cm; should be mS/cm

b - Field form incorrectly lists units a uS/cm; should be mS/cm

Table R-3. Water Sample Results
Boeing Developmental Center

Analyte	ISGP Benchmark	WA WQC Marine Chronic	WA WQC Marine Acute	NTR WQC HHO	NR WQC HHO	Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
						Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
							Result	Result	Result	Result	Result	Result
Total Metals (µg/L)												
Antimony	--	--	--	--	--		**3.3**	**0.097 J**	**0.10 J**	**0.17 J**	**2.9**	**0.23 J**
Arsenic	150	36	69	--	--		**1.0**	**0.91 J**	**0.88 J**	**0.83 J**	< 1.0 U	**0.82 J**
Beryllium	--	--	--	--	--		< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
Cadmium	2.1	9.4	42	--	--		**0.18 J**	< 0.050 U	< 0.059 U	< 0.40 U	**0.081 J**	< 0.40 U
Chromium	--	--	--	--	--		**0.77**	**0.96**	**0.29 J**	**0.45**	**1.1**	**0.37 J**
Chromium, hexavalent	--	--	--	--	--		na	na	na	na	na	na
Copper	14	3.7	5.8	--	--		**5.8**	**1.9**	**0.80 J**	< 1.5 U	**3.3**	**1.9**
Lead	81.6	8.5	221	--	--		**2.4**	**0.76**	**0.11 J**	**0.17 J**	**0.72**	**0.23 J**
Mercury	1.4	0.025	2.1	--	--		< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U	< 0.20 U
Nickel	--	8.3	75	--	--		1.7 J	**0.74 J**	**0.63 J**	**1.3 J**	**0.77 J**	**0.78 J**
Selenium	5	71	291	--	--		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Silver	3.8	--	2.2	--	--		< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U	< 0.40 U
Thallium	--	--	--	--	--		< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Zinc	117	86	95	--	--		**54**	**15**	**4.7**	**17**	**130**	**28 J**
PCB Congeners (µg/L) [a]												
Total PCB Congeners	--	0.03	10	1.70E-04	6.40E-05		**2.52E-04**	**0.011**	**0.00191**	**0.0000956 J**	**0.054 J**	**1.64E-04 J**
PCB TEQ, nd SDL*0	--	0.03	10	--	--		**1.00E-07 J**	**6.00E-07 J**	**3.80E-09 J**	0.00E+00 U	**1.10E-06 J**	**5.00E-11 J**
PCB TEQ, nd SDL*0.5	--	0.03	10	--	--		**1.20E-07 J**	**6.40E-07 J**	**1.40E-07 J**	8.60E-08 U	**1.10E-06 J**	**9.20E-08 J**
PCB TEQ, nd SDL*1	--	0.03	10	--	--		**1.30E-07 J**	**6.70E-07 J**	**2.90E-07 J**	1.70E-07 U	**1.20E-06 J**	**1.80E-07 J**
Dioxins and Furans (pg/L) [a]												
2,3,7,8-TCDD	--	--	--	0.014	0.0051		< 0.770 U	< 1.66 U	< 0.938 U	< 1.11 U	< 0.895 U	< 1.11 U
1,2,3,7,8-PeCDD	--	--	--	--	--		< 1.28 U	< 1.53 U	< 1.06 U	< 0.734 U	< 0.907 U	< 1.78 U
1,2,3,4,7,8-HxCDD	--	--	--	--	--		< 2.53 U	< 5.11 U	< 2.18 U	< 1.91 U	< 1.75 U	< 2.84 U
1,2,3,6,7,8-HxCDD	--	--	--	--	--		< 4.57 U	< 4.77 U	< 2.21 U	< 1.86 U	< 1.87 U	< 5.66 U
1,2,3,7,8,9-HxCDD	--	--	--	--	--		< 2.72 U	< 5.08 U	< 2.04 U	< 2.00 U	< 2.10 U	< 3.15 U
1,2,3,4,6,7,8-HpCDD	--	--	--	--	--		**3.84 J**	**35.4**	**11.5 J**	< 3.98 U	< 2.30 U*	**8.54 J**
OCDD	--	--	--	--	--		**26.3 J**	**250**	**88.8**	**10.7 J**	**16.6 J**	**57.4**
2,3,7,8-TCDF	--	--	--	--	--		< 0.745 U	< 1.24 U	< 0.776 U	< 0.795 U	< 0.751 U	< 0.731 U
1,2,3,7,8-PeCDF	--	--	--	--	--		< 0.611 U	< 1.40 U	< 0.829 U	< 0.558 U	< 1.01 U	< 0.784 U
2,3,4,7,8-PeCDF	--	--	--	--	--		< 0.66 U	< 1.54 U	< 0.506 U	< 0.594 U	< 0.994 U	< 0.893 U
1,2,3,4,7,8-HxCDF	--	--	--	--	--		< 0.519 U	< 1.70 U	< 0.588 U	< 0.572 U	< 0.747 U	< 1.31 U
1,2,3,6,7,8-HxCDF	--	--	--	--	--		< 0.596 U	< 1.98 U	< 0.671 U	< 0.594 U	< 0.873 U	< 1.40 U
1,2,3,7,8,9-HxCDF	--	--	--	--	--		< 0.66 U	< 3.58 U	< 1.13 U	< 0.685 U	< 0.864 U	< 1.39 U
2,3,4,6,7,8-HxCDF	--	--	--	--	--		< 0.454 U	< 2.36 U	< 0.76 U	< 0.456 U	< 0.528 U	< 0.983 U
1,2,3,4,6,7,8-HpCDF	--	--	--	--	--		< 1.22 U	**18.8 J**	< 2.07 U*	< 0.981 U	< 1.74 U	**4.56 J**
1,2,3,4,7,8,9-HpCDF	--	--	--	--	--		< 0.976 U	< 3.47 U	< 0.717 U	< 0.575 U	< 1.61 U	< 1.61 U
OCDF	--	--	--	--	--		**1.99 J**	**56.9**	**5.49 J**	< 1.19 U	< 2.28 U	**12.7 J**
Total TCDD	--	--	--	--	--		< 0.77 U	< 1.66 U	< 0.939 U	< 1.11 U	< 0.895 U	< 1.11 U
Total PeCDD	--	--	--	--	--		< 1.28 U	< 2.70 U	< 1.84 U	< 1.13 U	< 1.71 U	< 1.78 U
Total HxCDD	--	--	--	--	--		< 4.58 U	< 3.94 U*	< 4.32 U	< 3.15 U	< 2.85 U	< 5.82 U
Total HpCDD	--	--	--	--	--		**9.77**	**35.4 J**	**21.9**	< 3.98 U	< 4.94 U*	**19.6**
Total TCDF	--	--	--	--	--		< 0.745 U	< 1.24 U	< 1.34 U	< 0.795 U	< 1.45 U	< 0.983 U
Total PeCDF	--	--	--	--	--		< 1.01 U	**1.74**	< 0.858 U	< 0.794 U	< 1.38 U	< 1.29 U
Total HxCDF	--	--	--	--	--		< 0.451 U	**12.3 J**	< 0.900 U*	< 0.691 U	< 0.966 U	**3.15**
Total HpCDF	--	--	--	--	--		< 1.73 U	**45.4**	< 4.86 U*	< 1.01 U	< 2.24 U	**11.4**
Dioxin/Furan TEQ, nd SDL*0	--	--	--	--	--		**0.0469 J**	**0.634 J**	**0.143 J**	**0.0032 J**	**0.00498 J**	**0.152 J**
Dioxin/Furan TEQ, nd SDL*0.5	--	--	--	--	--		**1.83 J**	**3.79 J**	**1.76 J**	**1.49 J**	**1.57 J**	**2.62 J**
Dioxin/Furan TEQ, nd SDL*1	--	--	--	--	--		**3.62 J**	**6.95 J**	**3.38 J**	**2.99 J**	**3.14 J**	**5.10 J**

Table R-3. Water Sample Results
Boeing Developmental Center

Analyte	ISGP Benchmark	WA WQC Marine Chronic	WA WQC Marine Acute	NTR WQC HHO	NR WQC HHO	Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
						Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
							Result	Result	Result	Result	Result	Result
PAHs (µg/L)												
1-Methylnaphthalene	--	--	--	--	--		< 0.057 U	< 0.058 U	< 0.058 U	< 0.058 U	< 0.057 U	< 0.058 U
2-Chloronaphthalene	--	--	--	--	1,600		< 0.057 U	< 0.058 U	< 0.058 U	< 0.058 U	< 0.057 U	< 0.058 U
2-Methylnaphthalene	--	--	--	--	--		< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
Acenaphthene	--	--	--	--	990		< 0.095 U	< 0.096 U	< 0.096 U	< 0.096 U	< 0.095 U	< 0.096 U
Acenaphthylene	--	--	--	--	--		< 0.076 U	< 0.077 U	< 0.077 U	< 0.077 U	< 0.076 U	< 0.077 U
Anthracene	--	--	--	110,000	40,000		**0.013 J**	< 0.038 U	< 0.039 U	**0.014 J**	< 0.038 U	< 0.038 UJ
Benzo(a)anthracene	--	--	--	0.031	0.018		**0.033 J**	< 0.058 U	< 0.058 U	**0.089**	< 0.057 U	< 0.058 U
Benzo(a)pyrene	--	--	--	0.031	0.018		**0.051 J**	< 0.038 U	< 0.039 U	**0.12 J**	< 0.038 U	< 0.038 UJ
Benzo(b)fluoranthene	--	--	--	0.031	0.018		**0.11**	< 0.077 U	< 0.077 U	**0.31**	< 0.076 U	**0.040 J**
Benzo(g,h,i)perylene	--	--	--	--	--		**0.025 J**	< 0.058 U	< 0.058 U	**0.062**	< 0.057 U	< 0.058 U
Benzo(k)fluoranthene	--	--	--	0.031	0.018		**0.024 J**	< 0.058 U	< 0.058 U	**0.11**	< 0.057 U	< 0.058 U
Chrysene	--	--	--	0.031	0.018		**0.072**	< 0.038 U	< 0.039 U	**0.15**	< 0.038 U	**0.026 J**
Dibenz(a,h)anthracene	--	--	--	0.031	0.018		< 0.057 U	< 0.058 U	< 0.058 U	**0.019 J**	< 0.057 U	< 0.058 U
Dibenzofuran	--	--	--	--	--		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
Fluoranthene	--	--	--	370	140		**0.13**	< 0.048 U	< 0.048 U	**0.35**	**0.024 J**	**0.047 J**
Fluorene	--	--	--	14,000	5,300		< 0.057 U	< 0.058 U	< 0.058 U	< 0.058 U	< 0.057 U	< 0.058 U
Indeno(1,2,3-cd)pyrene	--	--	--	0.031	0.018		**0.025 J**	< 0.058 U	< 0.058 U	**0.088**	< 0.057 U	< 0.058 U
Naphthalene	--	--	--	--	--		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
Phenanthrene	--	--	--	--	--		**0.048 J**	< 0.077 U	< 0.077 U	**0.14**	< 0.076 U	< 0.077 U
Pyrene	--	--	--	11,000	4,000		**0.11**	< 0.058 U	< 0.058 U	**0.30**	**0.020 J**	**0.033 J**
Total Benzofluoranthenes	--	--	--	--	--		**0.13 J**	< 0.077 U	< 0.077 U	**0.42**	< 0.076 U	**0.040 J**
Total HPAHs	--	--	--	--	--		**0.58 J**	< 0.077 U	< 0.077 U	**1.6 J**	**0.044 J**	**0.15 J**
Total LPAHs	--	--	--	--	--		**0.061 J**	< 0.38 U	< 0.39 U	**0.15 J**	< 0.38 U	< 0.38 U
Total PAHs	--	--	--	--	--		**0.64 J**	< 0.38 U	< 0.39 U	**1.8 J**	**0.044 J**	**0.15 J**
cPAHs, nd RL*0	--	--	--	--	--		**0.071 J**	< 0 U	< 0 U	**0.18 J**	< 0 U	**0.0043 J**
cPAHs, nd RL*0.5	--	--	--	--	--		**0.074 J**	< 0.035 U	< 0.035 U	**0.18 J**	< 0.034 U	**0.035 J**
cPAHs, nd RL*1	--	--	--	--	--		**0.077 J**	< 0.069 U	< 0.070 U	**0.18 J**	< 0.069 U	**0.065 J**
Phthalates (µg/L)												
bis(2-Ethylhexyl)phthalate	--	--	--	5.9	2.2		< 2.8 U	< 2.9 U	< 2.9 U	**1.3 J**	< 2.8 U	< 2.9 U
Butylbenzylphthalate	--	--	--	--	1,900		< 0.57 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.57 U	< 0.58 U
Di-n-Butylphthalate	--	--	--	12,000	4,500		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.15 U	< 0.38 U
Diethylphthalate	--	--	--	120,000	44,000		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.11 U	< 0.38 U
Dimethylphthalate	--	--	--	2,900,000	1,100,000		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
Di-n-Octyl phthalate	--	--	--	--	--		< 0.38 U	< 0.38 U	< 0.39 U	**0.90**	**1.7**	< 0.38 U
Phenols (µg/L)												
2,3,4,6-Tetrachlorophenol	--	--	--	--	--		< 0.66 U	< 0.67 U	< 0.68 U	< 0.67 U	< 0.66 U	< 0.67 U
2,4,5-Trichlorophenol	--	--	--	--	3,600		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
2,4,6-Trichlorophenol	--	--	--	6.5	2.4		< 0.57 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.57 U	< 0.58 U
2,4-Dichlorophenol	--	--	--	790	290		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
2,4-Dimethylphenol	--	--	--	--	850		< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
2,4-Dinitrophenol	--	--	--	14,000	5,300		< 4.7 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.7 U	< 4.8 U
2-Chlorophenol	--	--	--	--	150		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
2-Methylphenol	--	--	--	--	--		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
2-Nitrophenol	--	--	--	--	--		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
4,6-Dinitro-2-Methylphenol	--	--	--	765	280		< 3.8 U	< 3.8 U	< 3.9 U	< 3.8 U	< 3.8 U	< 3.8 U
4-Chloro-3-methylphenol	--	--	--	--	--		< 0.38 U	< 0.38 U	< 0.39 U	< 0.38 U	< 0.38 U	< 0.38 U
4-Methylphenol	--	--	--	--	--		< 0.76 U	< 0.77 U	< 0.77 U	< 0.77 U	< 0.76 U	< 0.77 U
4-Nitrophenol	--	--	--	--	--		< 2.8 U	< 2.9 U	< 2.9 U	< 2.9 U	< 2.8 U	< 2.9 U

Table R-3. Water Sample Results
Boeing Developmental Center

					Location ID	BD-MH-1.32			BD-MH-5.16			BD-MH-11.31			BD-MH-12.56			BD-OWS-02			BD-OWS-14		
					Collection Date	12/22/2014			12/15/2014			12/15/2014			12/22/2014			12/3/2014			12/22/2014		
Analyte	ISGP Benchmark	WA WQC Marine Chronic	WA WQC Marine Acute	NTR WQC HHO	NR WQC HHO	Result			Result			Result			Result			Result			Result		
Pentachlorophenol	--	7.9	13	8.2	3.0	**0.14**	**J**		< 0.67	U		**0.15**	**J**		< 0.67	U		< 0.66	U		< 0.67	U	
Phenol	--	--	--	4,600,000	860,000	< 0.57	U		< 0.58	U		< 0.58	U		< 0.58	U		< 0.57	U		< 0.58	U	
Other SVOCs (µg/L)																							
1,2,4-Trichlorobenzene	--	--	--	--	70	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
1,2-Dichlorobenzene	--	--	--	17,000	1,300	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
1,3-Dichlorobenzene	--	--	--	2,600	960	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
1,4-Dichlorobenzene	--	--	--	2,600	190	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
2,4-Dinitrotoluene	--	--	--	9.1	3.4	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
2,6-Dinitrotoluene	--	--	--	--	--	**0.27**	**J**		< 0.38	U		< 0.39	U		< 0.38	U		**0.25**	**J**		< 0.38	U	
2-Nitroaniline	--	--	--	--	--	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
3,3'-Dichlorobenzidine	--	--	--	0.077	0.028	R			< 1.9	U		< 1.9	U		R			< 1.9	U		R		
3-Nitroaniline	--	--	--	--	--	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
4-Bromophenyl-phenylether	--	--	--	--	--	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
4-Chloroaniline	--	--	--	--	--	R			< 0.38	UJ		< 0.39	UJ		R			< 0.38	UJ		R		
4-Chlorophenyl-phenylether	--	--	--	--	--	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
4-Nitroaniline	--	--	--	--	--	< 0.57	U		< 0.58	U		< 0.58	U		< 0.58	U		< 0.57	U		< 0.58	U	
Benzoic Acid	--	--	--	--	--	< 2.8	U		**0.75**	**J**		< 2.9	U		< 2.9	U		**0.92**	**J**		< 2.9	U	
Benzyl Alcohol	--	--	--	--	--	< 0.13	U		< 0.38	U		< 0.39	U		< 0.13	U		< 0.38	U		< 0.38	U	
2,2'-Oxybis(1-Chloropropane)	--	--	--	170,000	65,000	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
bis(2-Chloroethoxy) Methane	--	--	--	--	--	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
Bis-(2-Chloroethyl) Ether	--	--	--	1.4	0.53	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
Carbazole	--	--	--	--	--	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
Hexachlorobenzene	--	--	--	0.00077	0.00029	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
Hexachlorobutadiene	--	--	--	50	18	< 0.57	U		< 0.58	U		< 0.58	U		< 0.58	U		< 0.57	U		< 0.58	U	
Hexachlorocyclopentadiene	--	--	--	17,000	1,100	< 1.9	U		< 1.9	U		< 1.9	U		< 1.9	U		< 1.9	U		< 1.9	U	
Hexachloroethane	--	--	--	8.9	3.3	< 0.57	U		< 0.58	U		< 0.58	U		< 0.58	U		< 0.57	U		< 0.58	U	
Isophorone	--	--	--	600	960	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
Nitrobenzene	--	--	--	1,900	690	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
N-Nitrosodimethylamine	--	--	--	8.1	3.0	< 1.9	U		< 1.9	U		< 1.9	U		< 1.9	U		< 1.9	U		< 1.9	U	
N-Nitroso-Di-N-Propylamine	--	--	--	--	0.51	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	
N-Nitrosodiphenylamine	--	--	--	16	6.0	< 0.38	U		< 0.38	U		< 0.39	U		< 0.38	U		< 0.38	U		< 0.38	U	

Results in **bold** are detections.

Results that are shaded in gray exceed one or more criteria.

a - Total PCB congeners and PCB/dioxin/furan TEQs include only congeners that met identification criteria as required by EPA Method1668C (PCBs) or EPA Method 1613B (dioxins/furans).

PCB and dioxin/furan congeners identified with a U* qualifier were tagged as "estimated maximum possible concentrations" by the laboratory. This was changed to non-detect (U) during data validation.

Table R-4. Water Sample Results Compared to Criteria
Boeing Developmental Center

Location ID	BD-MH-1.32					BD-MH-5.16					BD-MH-11.31				
Collection Date	12/22/2014					12/15/2014					12/15/2014				
	Exceedance Factor					Exceedance Factor					Exceedance Factor				
Analyte	ISGP Benchmark	WA Marine Chronic	WA Marine Acute	NTR Human Health - Organisms	NR Human Health - Organisms	ISGP Benchmark	WA Marine Chronic	WA Marine Acute	NTR Human Health - Organisms	NR Human Health - Organisms	ISGP Benchmark	WA Marine Chronic	WA Marine Acute	NTR Human Health - Organisms	NR Human Health - Organisms
Total Metals															
Zinc															
PCB Congeners															
Total PCB Congeners				1.5	3.9				63	167				11	30
PAHs															
Benzo(a)anthracene				1.1	1.8										
Benzo(a)pyrene				1.6	2.8										
Benzo(b)fluoranthene				3.5	6.1										
Benzo(k)fluoranthene					1.3										
Chrysene				2.3	4.0										
Dibenz(a,h)anthracene															
Indeno(1,2,3-cd)pyrene					1.4										

Exceedance Factors (EFs) are presented for detected concentrations only.

Only chemicals with EF > 1 are shown.

The EFs are calculated (result divided by criterion) and have no regulatory relevance. They provide an indication of the general magnitude of the concentration relative to the WA, NTR, or NR Water Quality Criteria.

Table R-4. Water Sample Results Compared to Criteria
Boeing Developmental Center

Location ID	BD-MH-12.56					BD-OWS-02					BD-OWS-14				
Collection Date	12/22/2014					12/3/2014					12/22/2014				
	Exceedance Factor					Exceedance Factor					Exceedance Factor				
Analyte	ISGP Benchmark	WA Marine Chronic	WA Marine Acute	NTR Human Health - Organisms	NR Human Health - Organisms	ISGP Benchmark	WA Marine Chronic	WA Marine Acute	NTR Human Health - Organisms	NR Human Health - Organisms	ISGP Benchmark	WA Marine Chronic	WA Marine Acute	NTR Human Health - Organisms	NR Human Health - Organisms
Total Metals															
Zinc						1.1	1.5	1.4							
PCB Congeners															
Total PCB Congeners					1.5		1.8		315	838					2.6
PAHs															
Benzo(a)anthracene				2.9	4.9										
Benzo(a)pyrene				3.9	6.7										
Benzo(b)fluoranthene				10	17									1.3	2.2
Benzo(k)fluoranthene				3.5	6.1										
Chrysene				4.8	8.3										1.4
Dibenz(a,h)anthracene					1.1										
Indeno(1,2,3-cd)pyrene				2.8	4.9										

Exceedance Factors (EFs) are presented for detected concentrations only.

Only chemicals with EF > 1 are shown.

The EFs are calculated (result divided by criterion) and have no regulatory relevance. They provide an indication of the general magnitude of the concentration relative to the WA, NTR, or NR Water Quality Criteria.

Table R-5. Water Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
Analyte	Result	Result	Result	Result	Result	Result
Total PCB Congeners (µg/L)	0.000252 J	0.0107 J	0.00191 J	0.000956 J	0.0536 J	0.000164 J
Total PCB Congeners (pg/L)	252 J	10,700 J	1,910 J	95.6 J	53,600 J	164 J
Total Mono-CB (pg/L)	< 0.882 U	1.70 J	< 2.55 U	< 1.13 U	13.8 J	< 1.84 U
PCB-1	< 0.871 U	1.70 J	< 2.55 U	< 1.07 U	13.8	< 1.83 U
PCB-2	< 0.882 U	< 1.34 U	< 2.36 U	< 1.13 U	< 2.01 U*	< 1.84 U
PCB-3	< 0.452 U*	< 1.30 U	< 2.29 U	< 1.13 U	< 3.00 U*	< 1.84 U
Total Di-CB (pg/L)	2.31 J	67.2 J	52.1 J	4.01 J	625 J	15.5 J
PCB-4/10	< 4.22 U	7.53 J	10.2 J	< 8.52 U*	251	8.90 J
PCB-5/8	< 3.51 U	9.46 J	13.1 J	< 3.98 U	131	< 3.56 U
PCB-6	< 3.60 U	5.74 J	7.33 J	< 4.08 U	93.5	< 3.66 U
PCB-7/9	< 3.55 U	< 4.98 U	< 6.91 U	< 4.03 U	15.4 J	< 3.61 U
PCB-11	< 8.77 U	31.2	12.5	< 7.78 U	< 29.4 U*	< 3.51 U
PCB-12/13	< 3.23 U	< 4.64 U	< 6.60 U	< 3.89 U	< 15.0 U*	< 3.56 U
PCB-14	< 2.79 U	< 4.14 U	< 5.89 U	< 3.35 U	< 10.6 U	< 3.07 U
PCB-15	2.31 J	13.3	8.94 J	4.01 J	134	6.55
Total Tri-CB (pg/L)	18.0 J	268 J	210 J	50.3 J	5,160 J	41.5 J
PCB-16/32	< 4.88 U	31.9	24.2	< 9.03 U	643	< 15.2 U
PCB-17	1.96 J	15.0	14.8	5.50	371	5.90
PCB-18	5.96	35.9	35.5	15.7	1,040	18.0
PCB-19	< 0.923 U	6.22	7.15	3.94 J	147	9.86
PCB-20/21/33	< 1.83 U*	19.2	13.0 J	2.82 J	142	< 1.17 U*
PCB-22	< 1.23 U*	17.8	12.1	< 2.19 U	313	< 0.701 U
PCB-23	< 0.527 U	< 1.93 U	< 1.23 U	< 0.888 U	< 1.22 U	< 0.674 U
PCB-24/27	< 0.586 U	5.97 J	7.57 J	3.39 J	93.0	< 5.85 U*
PCB-25	< 0.581 U	5.62	5.84	< 2.64 U*	63.0	< 0.743 U
PCB-26	< 0.515 U	12.9	16.3	4.75 J	139	3.30 J
PCB-28	6.39	53.4	36.9	7.08	1,120	< 5.82 U*
PCB-29	< 0.527 U	< 1.91 U	< 1.21 U	< 0.888 U	< 2.86 U*	< 0.674 U
PCB-30	< 0.583 U	< 1.59 U	< 0.889 U	< 0.927 U	< 0.901 U	< 1.01 U
PCB-31	3.68 J	36.9	23.9	7.08	654	4.40 J
PCB-34	< 0.490 U	< 2.01 U	< 1.28 U	< 0.826 U	< 4.28 U*	< 0.627 U
PCB-35	< 0.550 U	2.08 J	< 1.17 U	< 0.867 U	5.66	< 0.654 U
PCB-36	< 0.531 U	< 1.69 U	< 1.17 U	< 0.838 U	< 1.24 U	< 0.633 U
PCB-37	< 3.23 U	23.5	12.3	< 0.807 U	417	< 1.75 U
PCB-38	< 0.556 U	1.77 J	< 1.19 U	< 0.877 U	15.6	< 0.662 U
PCB-39	< 0.547 U	< 1.64 U	< 1.13 U	< 0.864 U	< 1.20 U	< 0.652 U

Table R-5. Water Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
Analyte	Result	Result	Result	Result	Result	Result
Total Tetra-CB (pg/L)	55.4 J	1,020 J	345 J	37.0 J	23,800 J	32.5 J
PCB-40	2.92 J	17.4	7.68	< 1.50 U	545	< 2.77 U*
PCB-41/64/71/72	< 10.8 U	87.3	32.8	< 6.44 U	2,570	< 16.1 U
PCB-42/59	3.79 J	32.6	12.6	2.39 J	989	5.34 J
PCB-43/49	< 9.25 U	92.6	43.2	< 10.3 U	2,140	< 18.9 U
PCB-44	< 13.8 U	120	36.0	< 6.68 U	2,750	< 14.6 U
PCB-45	1.74 J	13.5	4.87 J	< 1.62 U*	421	3.89 J
PCB-46	< 1.05 U	6.11	1.83 J	< 1.49 U	172	2.38 J
PCB-47	15.5	36.0	18.0	17.5	776	< 7.66 U
PCB-48/75	1.57 J	11.9	4.08 J	1.06 J	497	< 1.69 U*
PCB-50	< 0.991 U	< 2.29 U	< 3.44 U	< 1.33 U	6.18	< 1.48 U
PCB-51	3.49 J	12.7	7.50	5.31	105	2.75 J
PCB-52/69	< 21.8 U	183	56.9	< 16.7 U	2,720	< 31.2 U
PCB-53	1.94 J	22.7	12.3	< 3.27 U*	343	9.03
PCB-54	< 0.753 U	< 1.67 U*	< 2.77 U	< 1.01 U	< 4.93 U*	< 1.12 U
PCB-55	< 0.743 U	4.28 J	< 2.21 U	< 0.921 U	40.4	< 0.920 U
PCB-56/60	< 7.93 U	62.3	19.8	< 2.68 U*	2,150	< 5.88 U*
PCB-57	< 0.748 U	< 1.46 U	< 2.25 U	< 0.988 U	15.3	< 1.05 U
PCB-58	< 0.737 U	< 1.47 U	< 2.27 U	< 0.974 U	< 5.65 U*	< 1.04 U
PCB-61/70	17.6	141	34.8	6.54 J	2,280	9.10 J
PCB-62	< 0.711 U	< 1.78 U	< 2.76 U	< 0.945 U	< 1.06 U	< 1.09 U
PCB-63	< 0.720 U	3.96 J	< 2.24 U	< 0.952 U	95.6	< 1.01 U
PCB-65	< 0.733 U	< 1.73 U	< 2.68 U	< 0.975 U	< 1.03 U	< 1.13 U
PCB-67	< 0.767 U	2.79 J	< 2.33 U	< 1.01 U	70.5	< 1.08 U
PCB-68	3.22 J	1.88 J	2.56 J	4.24 J	13.1	< 0.920 U
PCB-73	< 0.704 U	< 1.68 U	< 2.76 U	< 1.00 U	< 1.06 U	< 1.08 U
PCB-74	< 5.42 U	45.1	13.4	< 2.57 U	1,380	< 3.88 U*
PCB-76/66	< 10.0 U	91.4	29.8	< 3.91 U	3,400	< 9.20 U
PCB-77	3.65 J	16.8	4.80 J	< 1.04 U	273	< 1.07 U
PCB-78	< 0.818 U	< 1.42 U	< 2.04 U	< 1.06 U	7.07	< 1.09 U
PCB-79	< 0.788 U	7.28	2.20 J	< 0.977 U	< 29.8 U*	< 0.976 U
PCB-80	< 0.691 U	< 1.24 U	< 1.92 U	< 0.855 U	< 0.800 U	< 0.855 U
PCB-81	< 0.746 U	4.36 J	< 1.83 U	< 0.968 U	18.8	< 0.994 U
Total Penta-CB (pg/L)	60.6 J	3,350 J	476 J	4.33 J	17,800 J	36.5 J
PCB-82	7.94	70.7	8.22	< 4.04 U	515	3.00 J
PCB-83	< 1.71 U	< 2.52 U	< 3.24 U	< 2.50 U	< 2.90 U*	< 2.75 U

Table R-5. Water Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
Analyte	Result	Result	Result	Result	Result	Result
PCB-84/92	< 23.9 U	211	33.1	< 5.49 U	1,240	< 13.2 U
PCB-85/116	< 6.47 U*	89.0	< 10.1 U*	< 2.98 U	726	3.69 J
PCB-86	< 2.74 U	< 3.75 U	< 4.82 U	< 4.02 U	< 5.09 U	< 4.42 U
PCB-87/117/125	< 20.7 U	199	23.8	< 4.15 U	1,130	< 8.32 U*
PCB-88/91	6.38	83.6	15.4	< 3.21 U	610	6.65
PCB-89	< 2.55 U	4.10 J	< 3.41 U	< 3.79 U	71.5	< 4.20 U
PCB-90/101	< 50.9 U	524	71.5	< 10.6 U	2,610	< 26.9 U
PCB-93	< 2.32 U	< 3.48 U	< 3.39 U	< 3.40 U	< 2.27 U	< 4.32 U
PCB-94	< 2.18 U	2.45 J	< 3.46 U	< 3.19 U	22.4	< 4.05 U
PCB-95/98/102	< 38.6 U	381	65.2	< 11.9 U	1,990	< 23.9 U
PCB-96	< 1.49 U	3.28 J	2.02 J	< 2.30 U	36.4	< 2.88 U
PCB-97	14.3	157	22.1	< 3.20 U	975	9.61
PCB-99	18.9	201	30.7	4.33 J	1,390	12.0
PCB-100	< 1.69 U	< 1.42 J*	< 3.07 U	< 2.61 U	10.9	< 3.27 U
PCB-103	< 1.69 U	2.05 J	2.16 J	< 2.60 U	21.6	< 3.25 U
PCB-104	< 1.29 U	< 2.42 U	< 2.45 U	< 1.99 U	< 1.55 U	< 2.49 U
PCB-105	< 18.7 U	170	27.4	< 2.10 U	837	< 8.07 U
PCB-106/118	< 48.5 U	451	63.8	< 8.11 U	2,100	< 19.9 U
PCB-107/109	4.00 J	34.5	6.50 J	< 2.24 U	178	1.55 J
PCB-108/112	2.38 J	23.1	3.62 J	< 2.95 U	178	< 1.96 U*
PCB-110	< 64.4 U	676	91.8	< 12.5 U	2,760	< 32.5 U
PCB-111/115	0.823 J	7.28 J	1.74 J	< 2.24 U	67.6	< 2.46 U
PCB-113	< 1.90 U	< 2.56 U	< 3.27 U	< 2.82 U	< 3.41 U	< 3.12 U
PCB-114	1.16 J	9.07	< 2.12 U	< 1.26 U	66.5	< 1.29 U
PCB-119	0.894 J	10.3	2.90 J	< 2.21 U	72.5	< 2.43 U
PCB-120	< 1.43 U	< 2.15 U	< 2.76 U	< 2.09 U	< 4.83 U*	< 2.30 U
PCB-121	< 1.40 U	< 2.07 U	< 2.01 U	< 2.05 U	< 1.35 U	< 2.60 U
PCB-122	< 1.44 U	4.47 J	< 2.33 U	< 1.50 U	39.6	< 1.53 U
PCB-123	< 1.00 U*	7.32	< 2.79 U	< 2.39 U	< 48.2 U*	< 2.87 U
PCB-124	2.79 J	21.1	4.07 J	< 2.30 U	88.0	< 2.75 U
PCB-126	0.995 J	5.78	< 2.24 U	< 1.30 U	9.88	< 1.35 U
PCB-127	< 1.31 U	< 2.10 U	< 2.16 U	< 1.38 U	< 1.66 U	< 1.36 U
Total Hexa-CB (pg/L)	41.3 J	3,540 J	505 J	< 10.7 U	5,000 J	10.4 J
PCB-128/162	< 12.8 U*	138	18.9	< 2.38 U	160	< 6.92 U
PCB-129	< 3.98 U*	41.7	5.05	< 2.24 U	65.8	< 2.27 U*
PCB-130	6.58	58.5	7.87	< 2.47 U	78.6	< 2.69 U*

Table R-5. Water Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
Analyte	Result	Result	Result	Result	Result	Result
PCB-131	< 1.62 U	< 3.37 U	< 2.82 U	< 2.44 U	< 0.356 U*	< 2.50 U
PCB-132/161	< 23.3 U	216	35.5	< 1.84 U	335	< 11.0 U
PCB-133/142	2.44 J	18.5	3.28 J	< 2.27 U	37.9	1.90 J
PCB-134/143	< 3.77 U*	40.3	4.92 J	< 2.21 U	76.5	2.90 J
PCB-135	10.6	84.7	< 13.2 U*	< 4.59 U	173	< 4.64 U
PCB-136	9.68	77.0	13.8	< 3.21 U	170	3.87 J
PCB-137	4.98	45.5	4.61 J	< 1.93 U	70.2	< 1.45 U*
PCB-138/163/164	< 89.9 U	882	121	< 10.7 U	1,010	< 38.6 U
PCB-139/149	< 63.5 U	578	92.7	< 7.11 U*	1,000	< 33.2 U
PCB-140	< 3.03 U	4.18 J	< 3.56 U	< 4.71 U	< 9.45 U*	< 4.76 U
PCB-141	< 17.4 U	177	22.6	< 1.97 U	196	< 7.56 U
PCB-144	3.05 J	28.8	5.84	< 4.28 U	69.1	< 4.32 U
PCB-145	< 2.15 U	< 2.93 U	< 3.84 U	< 3.35 U	< 2.42 U	< 3.38 U
PCB-146/165	< 12.1 U	99.6	16.1	< 1.91 U	138	< 6.74 U
PCB-147	< 3.02 U	15.2	< 2.88 U*	< 4.70 U	47.3	< 4.75 U
PCB-148	< 2.88 U	< 4.33 U	< 3.78 U	< 4.48 U	< 3.59 U	< 4.52 U
PCB-150	< 2.09 U	< 3.01 U	< 3.94 U	< 3.25 U	< 2.49 U	< 3.28 U
PCB-151	< 15.4 U	141	23.6	< 4.48 U	236	< 8.17 U
PCB-152	< 2.02 U	< 2.92 U	< 3.82 U	< 3.13 U	< 2.16 U*	< 3.16 U
PCB-153	< 67.5 U	662	97.6	< 10.2 U	823	< 33.4 U
PCB-154	< 2.65 U	7.99	< 3.17 U	< 4.11 U	14.4	< 4.15 U
PCB-155	< 1.97 U	< 2.82 U	< 3.70 U	< 3.06 U	< 2.34 U	< 3.09 U
PCB-156	< 8.45 U	71.6	9.45	< 1.26 U	95.4	< 3.56 U
PCB-157	< 1.57 U*	19.4	3.36 J	< 1.34 U	23.5	< 1.51 U
PCB-158/160	< 10.6 U	97.2	12.8	< 1.50 U	127	< 3.87 U*
PCB-159	< 0.968 U	< 2.49 U	< 1.86 U	< 1.42 U	5.56	< 1.50 U
PCB-166	< 1.04 U	< 3.09 U	< 1.94 U	< 1.52 U	4.86	< 1.60 U
PCB-167	3.93 J	37.1	5.68	< 1.36 U	42.8	1.76 J
PCB-168	< 1.01 U	< 2.25 U	< 1.88 U	< 1.52 U	< 1.13 U*	< 1.56 U
PCB-169	< 1.02 U	< 2.26 U	< 1.93 U	< 1.40 U	< 2.00 U	< 1.59 U
Total Hepta-CB (pg/L)	33.9 J	1,930	264 J	< 5.36 U	1,000 J	12.2 J
PCB-170	< 25.4 U	244	33.6	< 2.00 U	122	< 7.87 U
PCB-171	8.08	63.2	9.04	< 1.54 U	35.9	2.91 J
PCB-172	5.25	47.9	7.14	< 1.66 U	19.7	2.43 J
PCB-173	< 1.27 U	5.99	< 3.16 U	< 2.04 U	< 3.86 U*	< 1.64 U
PCB-174	< 28.3 U	224	28.5	< 1.74 U	116	< 13.3 U

Table R-5. Water Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
Collection Date	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
Analyte	Result	Result	Result	Result	Result	Result
PCB-175	< 1.18 U	9.63	< 3.08 U	< 2.10 U	< 4.97 U*	< 1.54 U
PCB-176	3.14 J	24.0	3.76 J	< 1.51 U	17.4	1.59 J
PCB-177	< 17.5 U	132	19.1	< 1.77 U	68.9	< 7.25 U
PCB-178	5.51	43.3	6.76	< 2.04 U	27.5	3.17 J
PCB-179	< 10.0 U	76.5	12.6	< 1.58 U	57.1	< 5.97 U
PCB-180	< 59.8 U	533	66.4	< 5.36 U	242	< 25.4 U
PCB-181	< 1.04 U	< 2.18 U	< 2.69 U	< 1.67 U	< 1.46 U*	< 1.34 U
PCB-182/187	< 38.2 U	278	43.0	< 4.00 U	161	< 17.4 U
PCB-183	< 15.0 U	125	18.6	< 1.80 U	77.5	< 6.74 U
PCB-184	< 0.926 U	< 1.89 U	< 2.41 U	< 1.64 U	< 1.42 U	< 1.21 U
PCB-185	3.03 J	23.3	3.60 J	< 1.60 U	13.2	< 1.29 U
PCB-186	< 0.850 U	< 1.83 U	< 2.34 U	< 1.51 U	< 1.38 U	< 1.11 U
PCB-188	< 0.814 U	< 1.67 U	< 2.12 U	< 1.44 U	< 1.25 U	< 1.06 U
PCB-189	1.11 J	10.2	1.36 J	< 1.21 U	4.50 J	< 0.935 U
PCB-190	4.58 J	52.5	6.25	< 1.16 U	24.5	2.07 J
PCB-191	< 1.30 U*	12.1	1.41 J	< 1.21 U	4.08 J	< 0.971 U
PCB-192	< 0.807 U	< 1.94 U	< 2.40 U	< 1.29 U	< 1.43 U	< 1.04 U
PCB-193	3.18 J	27.5	3.46 J	< 1.21 U	11.0	< 0.976 U
Total Octa-CB (pg/L)	35.8 J	435 J	46.3 J	< 3.62 U	246 J	11.3 J
PCB-194	< 14.3 U	99.9	14.6	< 1.85 U	44.6	< 5.06 U
PCB-195	5.71	37.0	5.51	< 1.24 U	16.9	2.76 J
PCB-196/203	21.7	130	19.8	< 2.93 U*	63.6	8.58 J
PCB-197	< 1.57 U	4.29 J	< 2.33 U	< 2.30 U	< 2.21 U*	< 2.28 U
PCB-198	< 2.44 U	7.16	< 3.37 U	< 3.56 U	3.41 J	< 3.53 U
PCB-199	< 21.8 U	114	< 15.3 U*	< 3.62 U	59.8	< 7.46 U
PCB-200	2.28 J	12.1	< 2.92 U	< 2.60 U	7.58	< 2.57 U
PCB-201	< 1.96 U*	10.1	2.82 J	< 2.45 U	< 6.25 U*	< 2.43 U
PCB-202	5.42	15.6	3.59 J	< 2.64 U	11.2	< 2.61 U
PCB-204	< 1.71 U	< 1.45 U	< 2.52 U	< 2.50 U	< 2.56 U	< 2.47 U
PCB-205	0.736 J	5.33	< 0.861 U	< 0.877 U	39.3	< 0.831 U
Total Nona-CB (pg/L)	3.31 J	34.3 J	6.14 J	< 1.71 U	2.05 J	4.35 J
PCB-206	< 7.83 U*	25.2	6.14	< 1.71 U	< 11.9 U*	3.25 J
PCB-207	1.20 J	3.11 J	< 0.944 U	< 0.902 U	2.05 J	< 0.727 U
PCB-208	2.11 J	5.98	< 1.99 U*	< 0.915 U	< 3.94 U*	1.10 J
Deca-CB (pg/L)	1.47 J	6.24	2.41 J	< 1.35 U	< 2.52 U	< 1.49 U
PCB-209	1.47 J	6.24	2.41 J	< 1.35 U	< 2.52 U	< 1.49 U*

Table R-5. Water Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-1.32		BD-MH-5.16		BD-MH-11.31		BD-MH-12.56		BD-OWS-02		BD-OWS-14	
Collection Date	12/22/2014		12/15/2014		12/15/2014		12/22/2014		12/3/2014		12/22/2014	
Analyte	Result		Result		Result		Result		Result		Result	
PCB TEQ, nd SDL*0	0.100	J	0.600	J	0.00380	J	0	U	1.10	J	0.00005	J
PCB TEQ, nd SDL*0.5	0.120	J	0.640	J	0.140	J	0.0860	U	1.10	J	0.0920	J
PCB TEQ, nd SDL*1	0.130	J	0.670	J	0.290	J	0.170	U	1.20	J	0.180	J

Total PCB congeners and total PCB homologs include only congeners that met identification criteria as required by EPA Method 1668C.

Table R-6. Water Sample Results - Conventionals
Boeing Developmental Center

		Location ID	BD-MH-1.32	BD-MH-5.16	BD-MH-11.31	BD-MH-12.56	BD-OWS-02	BD-OWS-14
		Collection	12/22/2014	12/15/2014	12/15/2014	12/22/2014	12/3/2014	12/22/2014
Analyte	ISGP Benchmark	Units	Result	Result	Result	Result	Result	Result
Conventionals								
Alkalinity	--	mg/L	19	28	40	27	< 5 U	29
Bicarbonate	--	mg/L $CaCO_3$	19	28	40	27	< 5 U	29
Carbonate	--	mg/L $CaCO_3$	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Chloride	--	mg/L	1.1 J	130	970	460 J	na	270 J
Specific Conductance	--	µmhos/cm	52	570	3800	1700	62	1000
Hydroxide	--	mg/L $CaCO_3$	na	na	na	na	na	na
Nitrate	--	mg/L	0.26 J	0.48 J	0.46 J	0.49 J	0.49 J	0.42 J
pH	5-9	std units	6.87	7.28 J	7.21 J	7.03	6.44 J	7.10
Salinity	--	mg/L	na	na	na	na	na	na
Sulfate	--	mg/L	0.65 J	19	110 J	64 J	na	38 J
Dissolved Organic Carbon	--	mg/L	4.7	2.5	2.5	3.4	1.9	2.6
Total Organic Carbon	--	mg/L	4.4	2.4	2.3	2.9	1.7	2.8
Total Suspended Solids[a]	30	mg/L	< 10 U	17	< 5 U	< 10 U	6.7	20
Turbidity	25	NTU	na	na	na	na	na	na
Oil & Grease	--	mg/L	na	na	na	na	na	na
Oil & Grease - Polar	--	mg/L	na	na	na	na	na	na
Oil & Grease - Silica Gel Treated	--	mg/L	na	na	na	na	na	na

a - The ISGP benchmark for Total Suspended Solids becomes effective on January 1, 2017.

Shaded results exceed the ISGP benchmark for that parameter.

Table R-7. Solids Sample Results
Boeing Developmental Center

Analyte	SMS Criteria SCO/ LAET[a]	SMS Criteria CSL/ 2LAET	Unit	Location ID: BD-MH-9.66 Collection Date: 12/3/2014 Result		Location ID: BD-MH-10.9 Collection Date: 12/3/2014 Result		Location ID: BD-MH-13.43 Collection Date: 12/2/2014 Result		Location ID: BD-OWS-15 Collection Date: 12/3/2014 Result	
Metals (Total) (mg/kg)											
Antimony	--	--	mg/kg	**3.4**		**14**		**6.7**		**19**	
Arsenic	57	93	mg/kg	**22**		**17**		**13**		**8.6**	
Beryllium	--	--	mg/kg	**0.27**		**0.28**	**J**	**0.25**	**J**	**0.17**	**J**
Cadmium	5.1	6.7	mg/kg	**2.8**		**7.3**		**2.6**		**7.1**	
Chromium	260	270	mg/kg	**67**	**J**	**140**		**67**	**J**	**48**	**J**
Copper	390	390	mg/kg	**110**		**290**		**190**		**150**	
Lead	450	530	mg/kg	**160**		**430**		**150**		**100**	
Mercury	0.41	0.59	mg/kg	**0.25**		**0.60**		**0.18**		**0.16**	
Nickel	--	--	mg/kg	**49**		**64**		**37**		**32**	
Selenium	--	--	mg/kg	**0.4**	**J**	**1.6**	**J**	**0.9**	**J**	**1.2**	**J**
Silver	6.1	6.1	mg/kg	**1.1**		**97**		**1.9**		**0.72**	
Thallium	--	--	mg/kg	< 0.6	U	< 1.3	U	< 0.96	U	< 1.7	U
Zinc	410	960	mg/kg	**870**		**1,600**		**850**		**850**	
PCB Aroclors (µg/kg)											
Aroclor 1016	--	--	µg/kg	< 13	U	< 290	U	< 22	U	< 37	U
Aroclor 1221	--	--	µg/kg	< 14	U	< 320	U	< 24	U	< 41	U
Aroclor 1232	--	--	µg/kg	< 14	U	< 320	U	< 24	U	< 41	U
Aroclor 1242	--	--	µg/kg	< 13	U	< 290	U	< 22	U	< 37	U
Aroclor 1248	--	--	µg/kg	< 13	U	< 290	U	< 22	U	< 37	U
Aroclor 1254	--	--	µg/kg	< 13	UJ	< 290	UJ	< 22	UJ	< 37	U
Aroclor 1260	--	--	µg/kg	**1,100**	**J**	**650**	**J**	**2,000**	**J**	< 37	U
Total PCB Aroclors	130	1,000	µg/kg	**1,100**	**J**	**650**	**J**	**2,000**	**J**	< 41	U
PCB Congeners (ug/kg) [b]											
Total PCB Congeners	130	1,000	µg/kg	**1,660**	**J**	**11,500**	**J**	**902**	**J**	**412**	**J**
PCB TEQ, nd SDL*0	--	--	µg/kg	**0.05**	**J**	**0.139**	**J**	**0.0541**		**0.04**	
PCB TEQ, nd SDL*0.5	--	--	µg/kg	**0.05**	**J**	**0.139**	**J**	**0.0541**		**0.04**	
PCB TEQ, nd SDL*1	--	--	µg/kg	**0.05**	**J**	**0.139**	**J**	**0.0541**		**0.04**	
Dioxins and Furans (ng/kg)											
2,3,7,8-TCDD	--	--	ng/kg	< 0.776	U*	**3.94**		< 5.39	U*	**7.74**	
1,2,3,7,8-PeCDD	--	--	ng/kg	**2.44**	**J**	**15.7**		**40.4**		**48.5**	
1,2,3,4,7,8-HxCDD	--	--	ng/kg	**3.5**		**27.4**		**45**		**49.2**	
1,2,3,6,7,8-HxCDD	--	--	ng/kg	**11.8**		**84.8**		**91.6**		**103**	
1,2,3,7,8,9-HxCDD	--	--	ng/kg	**7.05**		**57.7**		**164**		**204**	

Table R-7. Solids Sample Results
Boeing Developmental Center

Analyte	SMS Criteria SCO/ LAET[a]	SMS Criteria CSL/ 2LAET	Unit	Location ID: BD-MH-9.66 Collection Date: 12/3/2014 Result	Location ID: BD-MH-10.9 Collection Date: 12/3/2014 Result	Location ID: BD-MH-13.43 Collection Date: 12/2/2014 Result	Location ID: BD-OWS-15 Collection Date: 12/3/2014 Result
1,2,3,4,6,7,8-HpCDD	--	--	ng/kg	349	1,680	1,770	2,040
OCDD	--	--	ng/kg	3,710	16,900 J	17,200	17,300
2,3,7,8-TCDF	--	--	ng/kg	7.65	74.8	6.98	7.79
1,2,3,7,8-PeCDF	--	--	ng/kg	2.78	17.2	5.32 J	6.2 J
2,3,4,7,8-PeCDF	--	--	ng/kg	5.69	34.3	7.4 J	9.22 J
1,2,3,4,7,8-HxCDF	--	--	ng/kg	14.2	48.3	15.8 J	18.4 J
1,2,3,6,7,8-HxCDF	--	--	ng/kg	5.04	30.7	14.1 J	16.2 J
1,2,3,7,8,9-HxCDF	--	--	ng/kg	1.06 J	3.33	< 2.11 U	3.53 J
2,3,4,6,7,8-HxCDF	--	--	ng/kg	4.97	31.3	18.9 J	22.3 J
1,2,3,4,6,7,8-HpCDF	--	--	ng/kg	49.5	277	200	277
1,2,3,4,7,8,9-HpCDF	--	--	ng/kg	6.78	29.3	16.6 J	17.4 J
OCDF	--	--	ng/kg	134	648	543	609
Dioxin/Furan TEQ, nd SDL*0	25	--	ng/kg	15 J	91 J	100 J	130 J
Dioxin/Furan TEQ, nd SDL*0.5	25	--	ng/kg	15 J	91 J	110 J	130 J
Dioxin/Furan TEQ, nd SDL*1	25	--	ng/kg	16 J	91 J	110 J	130 J
Total TCDD	--	--	ng/kg	8.69 U*	66.7	118 J	90.5 J
Total TCDF	--	--	ng/kg	66.8 U*	557 J	129 J	122 J
Total PeCDD	--	--	ng/kg	19.9	138	350	319
Total PeCDF	--	--	ng/kg	67.1	457	170	175 J
Total HxCDD	--	--	ng/kg	94	766	1220	1280
Total HxCDF	--	--	ng/kg	91.6	505	299	345
Total HpCDD	--	--	ng/kg	692	3350	3640	4460
Total HpCDF	--	--	ng/kg	161	770	551	655
PAHs (µg/kg)							
1-Methylnaphthalene	--	--	µg/kg	15 J	150 J	340 J	370 J
2-Chloronaphthalene	--	--	µg/kg	< 26 U	< 580 U	< 450 U	< 760 U
2-Methylnaphthalene	670	1,400	µg/kg	18 J	< 580 U	320 J	310 J
Acenaphthene	500	730	µg/kg	45	2,200	11,000	4,500
Acenaphthylene	1,300	1,300	µg/kg	39	< 580 U	890	270 J
Anthracene	960	4,400	µg/kg	200	4,600	39,000	8,400
Benzo(a)anthracene	1,300	1,600	µg/kg	960	16,000	230,000	32,000
Benzo(a)pyrene	1,600	3,000	µg/kg	1,100	20,000	220,000	40,000
Benzo(g,h,i)perylene	670	720	µg/kg	320	7,700	85,000	16,000
Chrysene	1,400	2,800	µg/kg	1,300	24,000	300,000	49,000

Table R-7. Solids Sample Results
Boeing Developmental Center

Analyte	SMS Criteria SCO/ LAET[a]	SMS Criteria CSL/ 2LAET	Unit	Location ID / Collection Date	BD-MH-9.66 12/3/2014 Result	BD-MH-10.9 12/3/2014 Result	BD-MH-13.43 12/2/2014 Result	BD-OWS-15 12/3/2014 Result
Dibenz(a,h)anthracene	230	540	µg/kg		**79**	**2,100**	**27,000**	**4,700**
Dibenzofuran	540	700	µg/kg		**32 J**	**1,600 J**	**7,700**	**3,800**
Fluoranthene	1,700	2,500	µg/kg		**2,200**	**56,000**	**640,000**	**110,000**
Fluorene	540	1,000	µg/kg		**70**	**2,500**	**14,000**	**4,900**
Indeno(1,2,3-cd)pyrene	600	690	µg/kg		**450**	**10,000**	**120,000**	**22,000**
Naphthalene	2,100	2,400	µg/kg		**25 J**	< 580 U	**630**	**220 J**
Phenanthrene	1,500	5,400	µg/kg		**1,200**	**40,000**	**310,000**	**80,000**
Pyrene	2,600	3,300	µg/kg		**1,900**	**44,000**	**500,000**	**86,000**
Total Benzofluoranthenes	3,200	3,600	µg/kg		**2,400**	**45,000**	**570,000**	**93,000**
Total HPAHs	12,000	17,000	µg/kg		**1,100**	**220,000 J**	**2,700,000**	**450,000**
Total LPAHs	5,200	13,000	µg/kg		**1,600**	**49,000**	**380,000**	**98,000**
cPAHs, nd RL*0	1,000	--	µg/kg		**1,500 J**	**28,000 J**	**318,000**	**56,000 J**
cPAHs, nd RL*0.5	1,000	--	µg/kg		**1,500 J**	**28,000 J**	**318,000**	**56,000 J**
cPAHs, nd RL*1	1,000	--	µg/kg		**1,500 J**	**28,000 J**	**318,000**	**56,000 J**
Phthalates (µg/kg)								
bis(2-Ethylhexyl)phthalate	1,300	1,900	µg/kg		**1,900**	**2,900 J**	**15,000**	**10,000 J**
Butylbenzylphthalate	63	900	µg/kg		**180 J**	< 5,800 U	< 4,500 U	< 7,600 U
Di-n-Butylphthalate	1,400	5,100	µg/kg		**160 J**	< 15,000 U	< 11,000 U	< 19,000 U
Diethylphthalate	200	1,200	µg/kg		< 260 U	< 5,800 U	< 4,500 U	< 7,600 U
Dimethylphthalate	71	160	µg/kg		**10 J**	< 2,900 U	**230 J**	**470 J**
Di-n-Octyl phthalate	6,200	--	µg/kg		**270 J**	**1,400 J**	**2,500 J**	**3,300 J**
Phenols (µg/kg)								
2,4,5-Trichlorophenol	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2,4,6-Trichlorophenol	--	--	µg/kg		< 190 U	< 4,400 U	< 3,400 U	< 5,700 U
2,4-Dichlorophenol	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2,4-Dimethylphenol	29	29	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2,4-Dinitrophenol	--	--	µg/kg		< 1,300 U	< 29,000 U	< 23,000 U	< 38,000 U
2-Chlorophenol	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2-Methylphenol	63	63	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2-Nitrophenol	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
4,6-Dinitro-2-Methylphenol	--	--	µg/kg		< 1,300 U	< 29,000 U	< 23,000 U	< 38,000 U
4-Chloro-3-methylphenol	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
4-Methylphenol	670	670	µg/kg		< 260 U	< 5,800 U	< 4,500 U	< 7,600 U
4-Nitrophenol	--	--	µg/kg		< 1,300 U	< 29,000 U	< 23,000 U	< 38,000 U

Table R-7. Solids Sample Results
Boeing Developmental Center

Analyte	SMS Criteria SCO/ LAET[a]	SMS Criteria CSL/ 2LAET	Unit	Location ID	BD-MH-9.66	BD-MH-10.9	BD-MH-13.43	BD-OWS-15
				Collection Date	12/3/2014	12/3/2014	12/2/2014	12/3/2014
					Result	Result	Result	Result
Pentachlorophenol	360	690	µg/kg		**97 J**	< 5,800 U	< 4,500 U	< 7,600 U
Phenol	420	1,200	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
Other SVOCs (µg/kg)								
1,2,4-Trichlorobenzene	31	51	µg/kg		< 65 U	< 1,500 U	< 1,100 U	< 1,900 U
1,2-Dichlorobenzene	35	50	µg/kg		< 71 U	< 1,600 U	< 1,200 U	< 2,100 U
1,3-Dichlorobenzene	--	--	µg/kg		< 65 U	< 1,500 U	< 1,100 U	< 1,900 U
1,4-Dichlorobenzene	110	120	µg/kg		< 65 U	< 1,500 U	< 1,100 U	< 1,900 U
2,4-Dinitrotoluene	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2,6-Dinitrotoluene	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2-Nitroaniline	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
3,3'-Dichlorobenzidine	--	--	µg/kg		< 260 U	< 5,800 U	< 4,500 U	< 7,600 U
3-Nitroaniline	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
4-Bromophenyl-phenylether	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
4-Chloroaniline	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
4-Chlorophenyl-phenylether	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
4-Nitroaniline	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
Benzoic Acid	650	650	µg/kg		< 3,200 U	< 73,000 U	< 57,000 U	< 96,000 U
Benzyl Alcohol	57	73	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
2,2'-Oxybis(1-Chloropropane)	--	--	µg/kg		< 320 U	< 7,300 U	< 5,700 U	< 9,600 U
bis(2-Chloroethoxy) Methane	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
Bis-(2-Chloroethyl) Ether	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
Carbazole	--	--	µg/kg		**160**	**6,400**	**46,000**	**14,000**
Hexachlorobenzene	22	70	µg/kg		< 65 U	< 1,500 U	< 1,100 U	< 1,900 U
Hexachlorobutadiene	11	120	µg/kg		< 65 U	< 1,500 U	< 1,100 U	< 1,900 U
Hexachlorocyclopentadiene	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
Hexachloroethane	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
Isophorone	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
Nitrobenzene	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
N-Nitrosodimethylamine	--	--	µg/kg		< 1300 U	< 29,000 U	< 23,000 U	< 38,000 U
N-Nitroso-Di-N-Propylamine	--	--	µg/kg		< 130 U	< 2,900 U	< 2,300 U	< 3,800 U
N-Nitrosodiphenylamine	28	40	µg/kg		< 65 U	< 1,500 U	< 1,100 U	< 1,900 U
VOCs (µg/kg)								
1,1,1,2-Tetrachloroethane	--	--	µg/kg		< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
1,1,1-Trichloroethane	--	--	µg/kg		< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U

Table R-7. Solids Sample Results
Boeing Developmental Center

Analyte	SMS Criteria SCO/ LAET[a]	SMS Criteria CSL/ 2LAET	Unit	Location ID	BD-MH-9.66	BD-MH-10.9	BD-MH-13.43	BD-OWS-15
				Collection Date	12/3/2014	12/3/2014	12/2/2014	12/3/2014
				Result	Result	Result	Result	Result
1,1,2,2-Tetrachloroethane	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
1,1,2-Trichloroethane	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
1,1-Dichloroethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
1,1-Dichloroethene	--	--	µg/kg	< 3.3 U	< 17 U	< 11 U	< 15 U
1,1-Dichloropropene	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
1,2,3-Trichlorobenzene	--	--	µg/kg	< 1.3 UJ	**4.4 J**	< 4.3 UJ	< 6.2 UJ
1,2,3-Trichloropropane	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
1,2,4-Trimethylbenzene	--	--	µg/kg	< 1.3 UJ	**1.6 J**	< 4.3 UJ	**17 J**
1,2-Dibromo-3-chloropropane	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
1,2-Dibromoethane	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
1,2-Dichloroethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
1,2-Dichloropropane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
1,3,5-Trimethylbenzene	--	--	µg/kg	< 3.3 UJ	< 17 UJ	< 11 UJ	**2.3 J**
1,3-Dichloropropane	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
2,2-Dichloropropane	--	--	µg/kg	< 3.3 U	< 17 U	< 11 U	< 15 U
2-Chloroethylvinylether	--	--	µg/kg	< 3.3 UJ	< 17 UJ	< 11 UJ	< 15 UJ
2-Chlorotoluene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
2-Hexanone	--	--	µg/kg	< 3.3 UJ	< 17 UJ	< 11 UJ	< 15 UJ
4-Chlorotoluene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
Acetone	--	--	µg/kg	**11**	**220 J**	**47**	**290 J**
Acrolein	--	--	µg/kg	< 20 U	< 100 U	< 64 U	< 92 U
Acrylonitrile	--	--	µg/kg	< 6.6 U	< 34 U	< 21 U	< 31 U
Benzene	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	**1.2 J**
Bromobenzene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
Bromochloromethane	--	--	µg/kg	< 1.3 U	< 6.8 U	< 4.3 U	< 6.2 U
Bromoform	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
Bromomethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Carbon Disulfide	--	--	µg/kg	< 0.66 U	**0.92 J**	**2.3**	**11 J**
Carbon Tetrachloride	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Chlorobenzene	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
Dibromochloromethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Chloroethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Chloroform	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Chloromethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U

Table R-7. Solids Sample Results
Boeing Developmental Center

Analyte	SMS Criteria SCO/ LAET[a]	SMS Criteria CSL/ 2LAET	Unit	Location ID: BD-MH-9.66 Collection Date: 12/3/2014 Result	Location ID: BD-MH-10.9 Collection Date: 12/3/2014 Result	Location ID: BD-MH-13.43 Collection Date: 12/2/2014 Result	Location ID: BD-OWS-15 Collection Date: 12/3/2014 Result
cis-1,2-Dichloroethene	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
cis-1,3-Dichloropropene	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
Dibromomethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Bromodichloromethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Dichlorodifluoromethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Ethylbenzene	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	**4.9 J**
Isopropylbenzene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	**1.4 J**
m,p-Xylene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	**4.3 J**
2-Butanone	--	--	µg/kg	< 6.6 U	< 34 U	< 21 U	, 31 U
Iodomethane	--	--	µg/kg	< 10 U	< 51 U	< 32 U	< 46 U
4-Methyl-2-Pentanone (MIBK)	--	--	µg/kg	< 3.3 UJ	**5.6 J**	< 11 UJ	< 15 UJ
Methyl tert-Butyl Ether	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Methylene Chloride	--	--	µg/kg	< 10 U	< 51 U	< 32 U	< 46 U
n-Butylbenzene	--	--	µg/kg	< 1.3 UJ	**1.8 J**	< 4.3 UJ	**2.9 J**
n-Propylbenzene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	**3.3 J**
o-Xylene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	**4.1 J**
4-Isopropyltoluene	--	--	µg/kg	< 1.3 UJ	**1.7 J**	, 4.3 UJ	**12 J**
sec-Butylbenzene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
Styrene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	< 6.2 UJ
tert-Butylbenzene	--	--	µg/kg	< 1.3 UJ	**1.6 J**	< 4.3 UJ	< 6.2 UJ
Tetrachloroethene	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
Toluene	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	**46 J**
Total Xylenes	--	--	µg/kg	< 1.3 UJ	< 6.8 UJ	< 4.3 UJ	**8.4 J**
trans-1,2-Dichloroethene	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
trans-1,3-Dichloropropene	--	--	µg/kg	< 0.66 UJ	< 3.4 UJ	< 2.1 UJ	< 3.1 UJ
trans-1,4-Dichloro-2-butene	--	--	µg/kg	< 3.3 UJ	< 17 UJ	< 11 UJ	< 15 UJ
Trichloroethene	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Trichlorofluoromethane	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
Vinyl Acetate	--	--	µg/kg	< 3.3 U	< 17 U	< 11 U	< 15 U
Vinyl Chloride	--	--	µg/kg	< 0.66 U	< 3.4 U	< 2.1 U	< 3.1 U
TPH (mg/kg)							
Gasoline-Range Hydrocarbons	30/100	--	mg/kg	< 1.9 U	**18 J**	**4.8 J**	**9.5 J**
Diesel-Range Hydrocarbons	2,000	--	mg/kg	**180 J**	**950 J**	**4,100 J**	**2,200 J**
Motor Oil-Range Hydrocarbons	2,000	--	mg/kg	**1,100 J**	**6,600 J**	**10,000 J**	**7,100 J**

Table R-7. Solids Sample Results
Boeing Developmental Center

Location ID				BD-MH-9.66	BD-MH-10.9	BD-MH-13.43	BD-OWS-15
Collection Date				12/3/2014	12/3/2014	12/2/2014	12/3/2014
Analyte	SMS Criteria SCO/ LAET[a]	SMS Criteria CSL/ 2LAET	Unit	Result	Result	Result	Result
Grain size (%)							
Clay	--	--	%	0.40	3.6	3.4	3.6
Silt	--	--	%	3.2	61	37	36
Sand	--	--	%	93	32	58	48
Gravel	--	--	%	3.4	3.0	1.4	13
Cobbles	--	--	%	0.0	0.0	0.0	0.0
Conventionals (%)							
Total Organic Carbon	--	--	%	1.5	15	8.3	17
Total Solids	--	--	%	75.9	33.8	43.1	25.5

a - LDW RALs are presented for cPAHs and dioxin/furan TEQs. MTCA Method A cleanup levels for soil are presented for TPH.

b - Total PCB congeners and PCB/dioxin/furan TEQs include only congeners that met identification criteria as required by EPA Method1668C (PCBs) or EPA Method 1613B (dioxins/furans).

PCB and dioxin/furan congeners identified with a U* qualifier were tagged as "estimated maximum possible concentrations" by the laboratory. This was changed to non-detect (U) during data validation.

Petroleum hydrocarbon results are compared to MTCA Method A cleanup levels. Two cleanup levels are available for TPH-Gasoline under MTCA Method A. The more stringent value (30 mg/kg) is applied for facilities where benzene has been detected.

Results in **bold** are detections.

Results shaded in gray exceed one or more criteria.

Table R-8. Solids Sample Results Compared to Dry Weight Criteria
Boeing Developmental Center

Location ID	BD-MH-9.66		BD-MH-10.9		BD-MH-13.43		BD-OWS-15	
Collection Date	12/3/2014		12/3/2014		12/2/2014		12/3/2014	
Analyte	Exceedance Factor		Exceedance Factor		Exceedance Factor		Exceedance Factor	
	SCO/ LAET	CSL/ 2LAET	SCO/ LAET	CSL/ 2LAET	SCO/ LAET	CSL/ 2LAET	SCO/ LAET	CSL/ 2LAET
Metals (Total)								
Cadmium			1.4	1.1				
Mercury			1.5	1.0				
Silver			16	16				
Zinc	2.1		3.9	1.7	2.1		2.1	
PCBs								
Total PCB Aroclors	8.5	1.1	5.0		15	2.0		
Total PCB Congeners	13	1.7	88	11.5	6.9		3.2	
Dioxins and Furans								
Dioxin/Furan TEQ, nd SDL*0			3.7		4.0		5.2	
Dioxin/Furan TEQ, nd SDL*0.5			3.7		4.4		5.2	
Dioxin/Furan TEQ, nd SDL*1			3.7		4.4		5.2	
PAHs								
Acenaphthene			4.4	3.0	22	15	9.0	6.2
Anthracene			4.8	1.0	41	8.9	8.8	1.9
Benzo(a)anthracene			12	10	177	144	25	20
Benzo(a)pyrene			13	6.7	138	73	25	13
Benzo(g,h,i)perylene			11	11	127	118	24	22
Chrysene			17	8.6	214	107	35	18
Dibenz(a,h)anthracene			9.1	3.9	117	50	20	8.7
Dibenzofuran			3.0	2.3	14	11	7.0	5.4
Fluoranthene	1.3		33	22	376	256	65	44
Fluorene			4.6	2.5	26	14	9.1	4.9
Indeno(1,2,3-cd)pyrene			17	14	200	174	37	32
Phenanthrene			27	7.4	207	57	53	15
Pyrene			17	13	192	152	33	26
Total Benzofluoranthenes			14	13	178	158	29	26
Total HPAHs			18	13	225	159	38	26
Total LPAHs			9.4	3.8	73	29	19	7.5
cPAHs, nd RL*0	1.5		28		318		56	
cPAHs, nd RL*0.5	1.5		28		318		56	
cPAHs, nd RL*1	1.5		28		318		56	

Table R-8. Solids Sample Results Compared to Dry Weight Criteria
Boeing Developmental Center

Location ID	BD-MH-9.66		BD-MH-10.9		BD-MH-13.43		BD-OWS-15	
Collection Date	12/3/2014		12/3/2014		12/2/2014		12/3/2014	
Analyte	Exceedance Factor		Exceedance Factor		Exceedance Factor		Exceedance Factor	
	SCO/ LAET	CSL/ 2LAET	SCO/ LAET	CSL/ 2LAET	SCO/ LAET	CSL/ 2LAET	SCO/ LAET	CSL/ 2LAET
Phthalates								
bis(2-Ethylhexyl)phthalate	1.5		2.2	1.5	12	7.9	7.7	5.3
Dimethylphthalate					3.2	1.4	6.6	2.9
TPH								
Diesel-Range Hydrocarbons					2.1		1.1	
Motor Oil-Range Hydrocarbons			3.3		5.0		3.6	

Exceedance factors are presented for detected concentrations that exceed the SMS/AET criteria, LDW RALs (dioxins/furans and cPAHs), or MTCA Method A cleanup levels for soil (TPH).

The exceedance factors are calculated (result divided by criterion) and have no regulatory relevance. They provide an indication of the general magnitude of the concentration relative to the identified criterion.

Table R-9. Solids Sample Results Compared to Organic Carbon-Normalized Criteria
Boeing Developmental Center

Location ID			BD-MH-9.66		
Collection Date			12/03/2014		
Analyte	SMS Criteria		Result	EF	
	SCO	CSL		SCO	CSL
PAHs (mg/kg OC)					
2-Methylnaphthalene	38	64	**1.2 J**		
Acenaphthene	16	57	**3.0**		
Acenaphthylene	66	66	**2.6**		
Anthracene	220	1,200	**13**		
Benzo(a)anthracene	110	270	**64**		
Benzo(a)pyrene	99	210	**73**		
Benzo(g,h,i)perylene	31	78	**21**		
Chrysene	110	460	**87**		
Dibenz(a,h)anthracene	12	33	**5.3**		
Dibenzofuran	15	58	**2.1 J**		
Fluoranthene	160	1,200	**147**		
Fluorene	23	79	**4.7**		
Indeno(1,2,3-cd)pyrene	34	88	**30**		
Naphthalene	99	170	**1.7 J**		
Phenanthrene	100	480	**80**		
Pyrene	1,000	1,400	**127**		
Total Benzofluoranthenes	230	450	**160**		
Total HPAHs	960	5,300	**73**		
Total LPAHs	370	780	**107**		
Phthalates (mg/kg OC)					
bis(2-Ethylhexyl)phthalate	47	78	**127**	2.7	1.6
Butylbenzylphthalate	4.9	64	**12 J**	2.4	
Di-n-Butylphthalate	220	1,700	**11 J**		
Diethylphthalate	61	110	< 17 U		
Dimethylphthalate	53	53	**0.67 J**		
Di-n-Octyl phthalate	58	4,500	**18 J**		
Other SVOCs (mg/kg OC)					
1,2,4-Trichlorobenzene	0.81	1.8	< 4.3 U		
1,2-Dichlorobenzene	2.3	2.3	< 4.7 U		
1,4-Dichlorobenzene	3.1	9	< 4.3 U		
Hexachlorobenzene	0.38	2.3	< 4.3 U		
Hexachlorobutadiene	3.9	6.2	< 4.3 U		
N-Nitrosodiphenylamine	11	11	< 4.3 U		
PCB Aroclors (mg/kg OC)					
Total PCB Aroclors	12	65	**73 J**	6.1	1.1

Only samples with TOC content between 0.5 and 4.0% are OC-normalized for comparison with SMS OC-normalized criteria.

Exceedance Factors (EFs) are presented for detected concentrations that exceed the SMS criteria only.

Table R-10. Solids Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-9.66	BD-MH-10.9	BD-MH-13.43	BD-OWS-15
Collection Date	**12/3/2014**	**12/3/2014**	**12/2/2014**	**12/3/2014**
Analyte	**Result**	**Result**	**Result**	**Result**
Total PCB Congeners (ng/kg)[a]	1,660,000 J	11,500,000 J	902,000 J	412,000 J
Total Monochlorobiphenyl (ng/kg)[a]	106	401	425	7,920
PCB-1	59.6	139	170	5,070
PCB-2	13.1	132	116	759
PCB-3	33.2	130	139	2,090
Total Dichlorobiphenyl (ng/kg)[a]	1,590	6,330	3,630	19,000
PCB-4/10	83.3	304	174	2,030
PCB-5/8	271	1,050	667	4,550
PCB-6	48.4	202	146	1,230
PCB-7/9	32.2	110	< 167 U	2,600
PCB-11	613	2,790	1,800	5,870
PCB-12/13	35.9	230	112	903
PCB-14	< 18.2 U	< 42.3 U	< 215 U	< 1,060 U
PCB-15	509	1,640	727	1,880
Total Trichlorobiphenyl (ng/kg)[a]	10,300 J	22,000	8,450 J	14,300 J
PCB-16/32	1,570	1,980	1,150	2,180
PCB-17	457	843	530	1,250
PCB-18	1,050	2,720	656	1,960
PCB-19	182	331	< 211 U*	559
PCB-20/21/33	731	2,310	998	1,650
PCB-22	491	1,200	545	758
PCB-23	< 7.00 U	< 16.5 U	< 31.8 U	< 47.7 U
PCB-24/27	97.1	249	186	< 326 U*
PCB-25	90.3	269	< 157 U*	271
PCB-26	206	770	423	624
PCB-28	2,600	2,700	1,100	1,270
PCB-29	< 5.82 U*	29.6	< 37.7 U	< 56.5 U
PCB-30	< 3.31 U	< 4.84 U	< 25.5 U	< 98.1 U
PCB-31	1,660	3,340	1,710	2,160
PCB-34	14.8	23.0	< 35.8 U	< 53.7 U
PCB-35	64.5	734	167	366
PCB-36	19.5	104	< 47.0 U	152
PCB-37	764	4,070	985	1,140
PCB-38	324	221	< 44.8 U	< 76.9 U
PCB-39	8.80	62.5	< 48.2 U	< 82.7 U

Table R-10. Solids Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-9.66	BD-MH-10.9	BD-MH-13.43	BD-OWS-15
Collection Date	12/3/2014	12/3/2014	12/2/2014	12/3/2014
Analyte	Result	Result	Result	Result
Total Tetrachlorobiphenyl (ng/kg)[a]	190,000 J	532,000 J	59,200 J	42,100 J
PCB-40	1,220	5,010	412	225
PCB-41/64/71/72	14,000	26,100	7,100	2,430
PCB-42/59	7,300	5,470	1,220	1,050
PCB-43/49	35,300 J	38,000 J	4,170	2,940
PCB-44	13,600 J	61,000 J	7,070	4,470
PCB-45	665	1,580	662	540
PCB-46	2,190	896	316	246
PCB-47	21,000 J	7,490	993	802
PCB-48/75	1,030	1,800	500	593
PCB-50	27.5	28.3	< 56.4 U	< 35.2 U
PCB-51	2,640	1,040	229	167
PCB-52/69	26,300 J	134,000 J	12,900	6,120
PCB-53	6,140	3,750	778	609
PCB-54	67.3	67.6	< 18.3 U*	< 28.1 U
PCB-55	459	1,930	228	170
PCB-56/60	3,880	18,900	3,050	2,900
PCB-57	55.8	182	< 27.8 U*	49.9
PCB-58	322	210	< 14.9 U*	< 52.3 U
PCB-61/70	22,000 J	122,000 J	10,700	8,810
PCB-62	< 12.9 U	< 10.7 U	< 53.6 U	< 40.0 U
PCB-63	860	1,410	185	278
PCB-65	< 12.8 U	< 10.6 U	< 53.4 U	< 39.9 U
PCB-67	88.3	894	118	229
PCB-68	961	216	23.3	< 17.4 U*
PCB-73	95.2	< 9.07 U	< 49.4 U	< 36.2 U
PCB-74	3,450	17,500 J	2,300	2,690
PCB-76/66	24,000 J	39,900 J	4,580	5,500
PCB-77	1,380	30,500 J	1,260	1,050
PCB-78	< 10.2 U	< 10.2 U	< 37.1 U	< 29.4 U
PCB-79	802	4,210	325	197
PCB-80	< 10.0 U	< 7.21 U	< 34.8 U	< 27.4 U
PCB-81	94.2	8,310	92.9	72.5

Table R-10. Solids Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-9.66		BD-MH-10.9		BD-MH-13.43		BD-OWS-15	
Collection Date	12/3/2014		12/3/2014		12/2/2014		12/3/2014	
Analyte	Result		Result		Result		Result	
Total Pentachlorobiphenyl (ng/kg)[a]	438,000	J	3,340,000	J	270,000		116,000	J
PCB-82	4,880		68,300	J	5,180		2,340	
PCB-83	< 7.31	U	< 28.1	U	< 54.1	U	< 58.8	U
PCB-84/92	31,700	J	207,000	J	18,400		7,740	
PCB-85/116	6,820		68,700	J	5,860		2,490	
PCB-86	< 13.2	U	< 50.6	U	120		70.2	
PCB-87/117/125	16,500		187,000	J	14,900		5,930	
PCB-88/91	17,000		53,200	J	5,290		2,460	
PCB-89	286		2,340		361		177	
PCB-90/101	77,500	J	581,000	J	46,200		22,400	
PCB-93	< 12.9	U	< 41.0	U	< 96.7	U	< 104	U
PCB-94	780		1,500		178		109	
PCB-95/98/102	54,400	J	382,000	J	36,900		13,900	
PCB-96	651		1,010		109		< 75.1	U
PCB-97	16,500	J	149,000	J	12,100		4,910	
PCB-99	33,000	J	154,000	J	12,800		5,530	
PCB-100	922		997		76.0		< 91.2	U
PCB-103	1,230		2,440		163		103	
PCB-104	17.9		< 64.1	U*	< 56.8	U	< 72.2	U
PCB-105	12,900	J	216,000	J	13,900		6,830	
PCB-106/118	60,000	J	546,000	J	36,400		16,000	
PCB-107/109	5,530		32,000	J	2,440		1,080	
PCB-108/112	4,010		22,900	J	1,860		779	
PCB-110	84,100	J	581,000	J	51,000		21,000	
PCB-111/115	659		6,370		655		220	
PCB-113	132		1,900		< 51.0	U	< 1,240	U*
PCB-114	754		10,300		743		437	
PCB-119	3,830		7,740		549		252	
PCB-120	564		1,600		192		< 53.3	U
PCB-121	< 6.71	U	< 21.4	U	< 50.4	U	< 54.5	U
PCB-122	530		6,570		516		231	
PCB-123	631		8,250		635		300	
PCB-124	1,990		24,900	J	1,750		652	
PCB-126	446		13,500	J	504		358	
PCB-127	< 8.52	U	< 390	U	< 85.2	U	< 236	U

Table R-10. Solids Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-9.66		BD-MH-10.9		BD-MH-13.43		BD-OWS-15	
Collection Date	12/3/2014		12/3/2014		12/2/2014		12/3/2014	
Analyte	Result		Result		Result		Result	
Total Hexachlorobiphenyl (ng/kg)[a]	552,000	J	4,140,000	J	322,000	J	113,000	
PCB-128/162	14,800		167,000	J	10,400		5,050	
PCB-129	4,970		56,900	J	3,650		1,580	
PCB-130	6,580		61,200	J	4,420		2,000	
PCB-131	< 20.5	U	< 417	U	< 86.2	U	< 88.5	U
PCB-132/161	31,000	J	294,000	J	20,100		8,900	
PCB-133/142	3,440		30,700	J	2,160		896	
PCB-134/143	6,740		55,100	J	3,890		1,530	
PCB-135	16,200	J	95,600	J	9,150		2,910	
PCB-136	15,000	J	87,700	J	8,420		2,660	
PCB-137	4,630		37,900	J	3,130		1,200	
PCB-138/163/164	116,000	J	979,000	J	67,700		23,300	
PCB-139/149	113,000	J	605,000	J	64,600		21,400	
PCB-140	618		2,280		371		156	
PCB-141	25,200	J	212,000	J	14,700		4,820	
PCB-144	5,940		38,300	J	3,940		1,240	
PCB-145	20.5		164		< 61.5	U	< 44.5	U
PCB-146/165	15,300		119,000	J	8,180		3,160	
PCB-147	2,930		8,700		1,190		482	
PCB-148	120		353		< 99.3	U	< 71.8	U
PCB-150	276		779		80.9		< 53.5	U
PCB-151	33,700	J	188,000	J	18,800		5,070	
PCB-152	126		477		75.1		36.1	
PCB-153	106,000	J	802,000	J	57,200	J	18,800	
PCB-154	1,470		5,510		506		257	
PCB-155	< 9.62	U	29.5		< 66.4	U	< 48.0	U
PCB-156	9,300		107,000	J	6,750		2,660	
PCB-157	2,080		24,700	J	1,470		661	
PCB-158/160	12,300		113,000	J	8,220		3,060	
PCB-159	< 14.5	U	< 375	U	< 71.9	U	< 64.8	U
PCB-166	323		3,480		239		111	
PCB-167	4,080		41,300	J	2,670		1,140	
PCB-168	190		762		85.5		< 55.4	U
PCB-169	28.7		314		55.4		< 69.4	U

Table R-10. Solids Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-9.66	BD-MH-10.9	BD-MH-13.43	BD-OWS-15
Collection Date	12/3/2014	12/3/2014	12/2/2014	12/3/2014
Analyte	Result	Result	Result	Result
Total Heptachlorobiphenyl (ng/kg)[a]	360,000 J	2,490,000 J	185,000 J	66,800
PCB-170	40,700 J	242,000 J	20,600	7,660
PCB-171	10,100 J	70,100 J	5,200	1,740
PCB-172	5,940	41,200	3,190	1,190
PCB-173	1,110	6,550	597	184
PCB-174	45,900 J	329,000 J	24,000	7,270
PCB-175	1,740	11,600	878	313
PCB-176	5,290	35,500	2,670	908
PCB-177	26,900 J	188,000 J	14,000	4,480
PCB-178	8,410	59,200 J	4,090	1,600
PCB-179	19,800 J	138,000 J	9,640	3,450
PCB-180	104,000 J	729,000 J	55,900 J	20,500
PCB-181	145	1,070	76.5	< 44.2 U
PCB-182/187	46,400 J	342,000 J	22,300	9,480
PCB-183	22,700 J	159,000 J	11,200	4,260
PCB-184	25.6	227	< 19.8 U	< 23.3 U
PCB-185	4,300	32,800	2,300	812
PCB-186	< 15.1 U	33.1	< 22.2 U	< 26.1 U
PCB-188	72.7	507	43.7	24.4
PCB-189	1,520	10,300	783	338
PCB-190	8,220	48,600	4,000	1,380
PCB-191	1,740	11,400	907	340
PCB-192	< 17.2 U	< 101 U	< 28.7 U	< 35.0 U
PCB-193	5,000	32,700	2,540	874
Total Octachlorobiphenyl (ng/kg)[a]	101,000 J	799,000 J	47,800	22,000 J
PCB-194	24,500 J	191,000 J	11,800	4,740
PCB-195	9,710	70,100 J	4,160	1,740
PCB-196/203	28,900 J	212,000 J	13,400	6,620
PCB-197	957	7,730	453	244
PCB-198	1,130	13,500 J	517	< 189 U*
PCB-199	24,400 J	189,000 J	11,400	5,620
PCB-200	3,190	25,700 J	1,550	686
PCB-201	3,060	29,300 J	1,550	795
PCB-202	4,270	52,100 J	2,360	1,330
PCB-204	< 8.27 U	102	< 44.7 U	< 70.8 U
PCB-205	1,170	8,810	558	218

Table R-10. Solids Sample Results - PCB Congeners
Boeing Developmental Center

Location ID	BD-MH-9.66		BD-MH-10.9		BD-MH-13.43	BD-OWS-15
Collection Date	**12/3/2014**		**12/3/2014**		**12/2/2014**	**12/3/2014**
Analyte	**Result**		**Result**		**Result**	**Result**
Total Nonachlorobiphenyl (ng/kg)[a]	9,740		200,000	J	5,490	4,130
PCB-206	7,240		146,000	J	4,020	2,660
PCB-207	893		13,600	J	526	608
PCB-208	1,610		39,900	J	941	858
Decachlorobiphenyl (ng/kg)	522		16,700	J	461	6,580
PCB-209	522		16,700	J	461	6,580
PCB TEQ, nd SDL*0	50.0	J	139	J	54.1	40.0
PCB TEQ, nd SDL*0.5	50.0	J	139	J	54.1	40.0
PCB TEQ, nd SDL*1	50.0	J	139	J	54.1	40.0

a - Total PCBs and total PCB homologs include only congeners that met identification criteria as required by EPA Method1668C.

PCB congeners identified with a U* qualifier were tagged as "estimated maximum possible concentrations" by the laboratory. This was changed to non-detect (U) during data validation.

APPENDIX J-5

Sampling Report: Summary of PCB Source Tracing Within the Boeing Developmental Center (CALIBRE Systems, 2017)

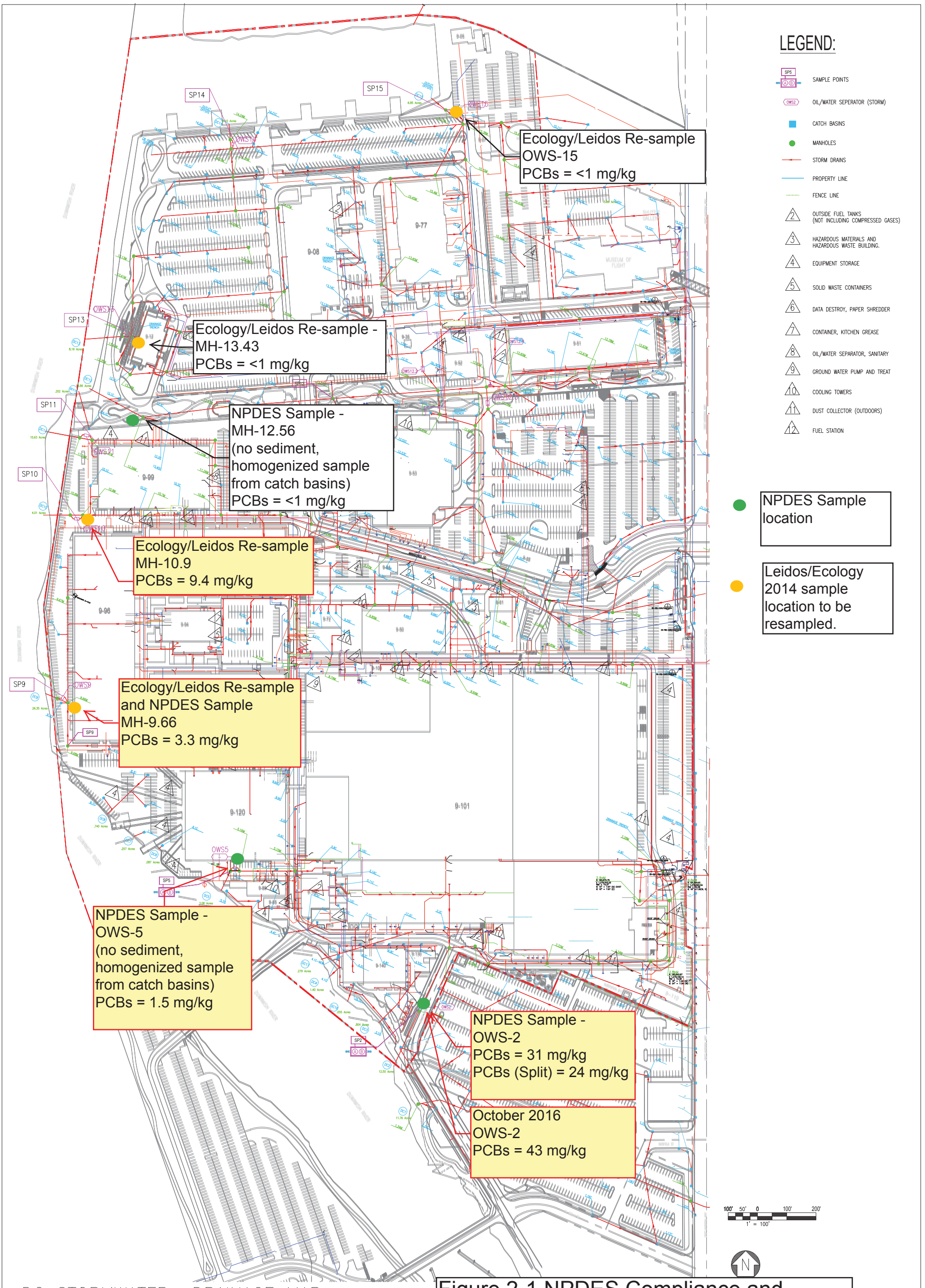
Sampling Report:
Summary of PCB Source Tracing
Within the Boeing Developmental Center

Prepared for:

The Boeing Company
EHS Remediation

Prepared by:
CALIBRE Systems

April 2017



DC STORMWATER DRAINAGE MAP

BOEING®

CALIBRE

Figure 2-1 NPDES Compliance and Ecology/Leidos Re-Sample Locations June and October 2016

SAMPLING LOCATIONS FROM STRUCTURES WITHIN THE DC STORMWATER CONVEYANCE SYSTEM

Table 2-2 Storm Drain Solids - ISGP Permit Compliance Sample Locations - June 2016

Sample ID	BDC-OWS-2-062316			BDC-OWS-2B-062316			BDC-DC-5-CB-HOM-062116			BDC-MH-9.66-062116			BDC-DC-12-CB-HOM-062116			BDC-Dup-01-062116		
	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag
SW8082A - PCB Aroclors																		
Aroclor 1016	<290	µg/kg	U	<120	µg/kg	U	<19	µg/kg	U	<100	µg/kg	U	<3.9	µg/kg	U	<4	µg/kg	U
Aroclor 1242	<290	µg/kg	U	<120	µg/kg	U	<19	µg/kg	U	<100	µg/kg	U	<3.9	µg/kg	U	<4	µg/kg	U
Aroclor 1248	17,000	µg/kg		14,000	µg/kg		<19	µg/kg	U	<320	µg/kg	Y	<3.9	µg/kg	U	<4	µg/kg	U
Aroclor 1254	14,000	µg/kg		10,000	µg/kg		960	µg/kg		1,500	µg/kg		180	µg/kg		190	µg/kg	
Aroclor 1260	<1,700	µg/kg	Y	<870	µg/kg	Y	620	µg/kg		1,800	µg/kg		62	µg/kg		79	µg/kg	
Aroclor 1221	<290	µg/kg	U	<120	µg/kg	U	<19	µg/kg	U	<100	µg/kg	U	<3.9	µg/kg	U	<4	µg/kg	U
Aroclor 1232	<290	µg/kg	U	<120	µg/kg	U	<19	µg/kg	U	<100	µg/kg	U	<3.9	µg/kg	U	<4	µg/kg	U
SUM AROCLORS	31,000	µg/kg		24,000	µg/kg		1,580	µg/kg		3,300	µg/kg		242	µg/kg		269	µg/kg	
EPA1668 - PCB Congeners																		
Total PCB Congeners	NS			NS			NS			8,330,000	pg/g		NS			NS		
NWTPH-Dx																		
Diesel Range Organics	1,400	mg/kg					810	mg/kg		350	mg/kg		96	mg/kg		130	mg/kg	
Motor Oil Range Organics	10,000	mg/kg					2,700	mg/kg		1,200	mg/kg		350	mg/kg		430	mg/kg	
SW8270DSIM - PAHs																		
1-Methylnaphthalene	42	µg/kg	J	NS			25	µg/kg		50	µg/kg		5.6	µg/kg	J	<9.7	µg/kg	U
2-Methylnaphthalene	65	µg/kg		NS			41	µg/kg		82	µg/kg		34	µg/kg		17	µg/kg	
Acenaphthene	65	µg/kg		NS			46	µg/kg		120	µg/kg		7.4	µg/kg	J	5.8	µg/kg	J
Acenaphthylene	56	µg/kg	J	NS			30	µg/kg		240	µg/kg		<9.8	µg/kg	U	<9.7	µg/kg	U
Anthracene	220	µg/kg		NS			220	µg/kg		890	µg/kg		20	µg/kg		18	µg/kg	
Benzo(a)anthracene	660	µg/kg		NS			750	µg/kg		3,000	µg/kg		110	µg/kg		110	µg/kg	
Benzo(a)pyrene	1,000	µg/kg		NS			1,000	µg/kg		2,600	µg/kg		170	µg/kg		160	µg/kg	
Benzo(g,h,i)perylene	1,300	µg/kg		NS			1,300	µg/kg		1,700	µg/kg		170	µg/kg		160	µg/kg	
Chrysene	1,800	µg/kg		NS			1,600	µg/kg		3,700	µg/kg		220	µg/kg		200	µg/kg	
Dibenz(a,h)anthracene	240	µg/kg		NS			290	µg/kg		530	µg/kg		39	µg/kg		36	µg/kg	
Dibenzofuran	90	µg/kg		NS			77	µg/kg		110	µg/kg		10	µg/kg		8.6	µg/kg	J
Fluoranthene	2,800	µg/kg		NS			2,000	µg/kg		5,800	µg/kg		440	µg/kg		430	µg/kg	
Fluorene	120	µg/kg		NS			66	µg/kg		200	µg/kg		8.8	µg/kg	J	8.3	µg/kg	J
Indeno(1,2,3-cd)pyrene	970	µg/kg		NS			1,100	µg/kg		1,600	µg/kg		140	µg/kg		140	µg/kg	
Naphthalene	120	µg/kg		NS			82	µg/kg		190	µg/kg		13	µg/kg		9	µg/kg	J
Phenanthrene	1,600	µg/kg		NS			1,000	µg/kg		3,000	µg/kg		200	µg/kg		180	µg/kg	
Pyrene	1,700	µg/kg		NS			1,400	µg/kg		5,100	µg/kg		280	µg/kg		270	µg/kg	
Total Benzofluoranthenes	2,700	µg/kg		NS			3,100	µg/kg		4,700	µg/kg		420	µg/kg		400	µg/kg	
EPA200.8 - Total Metals																		
Antimony	4	mg/kg		NS			<0.4	mg/kg	U	<0.3	mg/kg	U	0.5	mg/kg		<0.4	mg/kg	U
Arsenic	9	mg/kg		NS			5.6	mg/kg		20.9	mg/kg		4.7	mg/kg		5.3	mg/kg	
Beryllium	<1	mg/kg	U	NS			<0.4	mg/kg	U	0.3	mg/kg		<0.4	mg/kg	U	<0.4	mg/kg	U
Cadmium	2.7	mg/kg		NS			1.9	mg/kg		2.7	mg/kg		0.5	mg/kg		0.3	mg/kg	
Chromium	179	mg/kg		NS			28	mg/kg		109	mg/kg		18	mg/kg		24	mg/kg	
Copper	238	mg/kg		NS			63	mg/kg		235	mg/kg		39	mg/kg		40	mg/kg	
Lead	184	mg/kg		NS			50	mg/kg		189	mg/kg		20.4	mg/kg		21.2	mg/kg	
Mercury	0.3	mg/kg		NS			0.09	mg/kg		0.37	mg/kg		0.06	mg/kg		0.08	mg/kg	
Nickel	40	mg/kg		NS			26	mg/kg		53.7	mg/kg		18	mg/kg		20	mg/kg	
Selenium	<3	mg/kg	U	NS			<1	mg/kg	U	0.8	mg/kg		<1	mg/kg	U	<1	mg/kg	U
Silver	2	mg/kg		NS			0.8	mg/kg		2.2	mg/kg		<0.4	mg/kg	U	<0.4	mg/kg	U
Thallium	<1	mg/kg	U	NS			<0.4	mg/kg	U	<0.3	mg/kg	U	<0.4	mg/kg	U	<0.4	mg/kg	U
Zinc	1,590	mg/kg		NS			514	mg/kg		1,400	mg/kg		153	mg/kg		155	mg/kg	

Table 2-2 Storm Drain Solids - ISGP Permit Compliance Sample Locations - June 2016

Sample ID	BDC-OWS-2-062316			BDC-OWS-2B-062316			BDC-DC-5-CB-HOM-062116			BDC-MH-9.66-062116			BDC-DC-12-CB-HOM-062116			BDC-Dup-01-062116		
	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag
PSEP-PS - Grain Size																		
Phi Scale <-1	16.4	%		NS			12.2	%		9.5	%		18.9	%		NS		
Phi Scale -1 to 0	7.1	%		NS			12.2	%		12.2	%		4.6	%		NS		
Phi Scale 0 to 1	17.4	%		NS			11.9	%		24.6	%		9.6	%		NS		
Phi Scale 1 to 2	34.5	%		NS			12.8	%		30.9	%		16.8	%		NS		
Phi Scale 2 to 3	14.6	%		NS			11.1	%		12.5	%		13.4	%		NS		
Phi Scale 3 to 4	4.4	%		NS			6.8	%		2.7	%		13.4	%		NS		
Phi Scale 4 to 5	5.5	%		NS			9.9	%		3.3	%		4	%		NS		
Phi Scale 5 to 6	<0.1	%	U	NS			10.8	%		1.7	%		6.7	%		NS		
Phi Scale 6 to 7	<0.1	%	U	NS			6.3	%		1.2	%		4.3	%		NS		
Phi Scale 7 to 8	<0.1	%	U	NS			3.4	%		0.7	%		3.5	%		NS		
Phi Scale 8 to 9	<0.1	%	U	NS			1.5	%		0.1	%		1.8	%		NS		
Phi Scale 9 to 10	<0.1	%	U	NS			0.3	%		0.2	%		1.9	%		NS		
Phi Scale >10	<0.1	%	U	NS			0.7	%		0.2	%		1.2	%		NS		
Fines (Silt/Clay)	5.5	%		NS			33	%		7.5	%		23.4	%		NS		
SM2540G - Percent Solids																		
Total Solids	19.15	%		NS			44.32	%		72.76	%		45.3	%		NS		
PLUMB81TC - TOC																		
Total Organic Carbon	9.97	%		NS			3.57	%		1.44	%		4.6	%		NS		

Qualifiers

U	Non detect
Y	Non detect at raised reporting limit
NS	Not sampled

Table 2-3 Storm Drain Solids - Ecology/Leidos Re-sample Locations - June 2016

Sample ID	BDC-MH-13.43-062116			BDC-MH-10.9-062116			BDC-OWS-15-062116		
EPA 8082 (Aroclors)	Result	Units	Flag	Result	Units	Flag	Result	Units	Flag
SW8082A - PCB Aroclors									
Aroclor 1016	<3.9	µg/kg	U	<1000	µg/kg	U	<3.9	µg/kg	U
Aroclor 1242	<3.9	µg/kg	U	<1000	µg/kg	U	<3.9	µg/kg	U
Aroclor 1248	39	µg/kg	Y	<1000	µg/kg	U	44	µg/kg	
Aroclor 1254	190	µg/kg		4,100	µg/kg		170	µg/kg	
Aroclor 1260	110	µg/kg		5,300	µg/kg		120	µg/kg	
Aroclor 1221	<3.9	µg/kg	U	<1000	µg/kg	U	<3.9	µg/kg	U
Aroclor 1232	<3.9	µg/kg	U	<1000	µg/kg	U	<3.9	µg/kg	U
SUM AROCLORS	300	µg/kg		9,400	µg/kg		334	µg/kg	
EPA1668 - PCB Congeners									
Total PCB Congeners	265,000	pg/g		11,300,000	pg/g		333,000	pg/g	
SW8270DSIM - PAHs									
1-Methylnaphthalene	31	µg/kg	J	<99	µg/kg	U	38	µg/kg	
2-Methylnaphthalene	61	µg/kg		87	µg/kg	J	68	µg/kg	
Acenaphthene	22	µg/kg	J	<99	µg/kg	U	33	µg/kg	J
Acenaphthylene	21	µg/kg	J	<99	µg/kg	U	25	µg/kg	J
Anthracene	63	µg/kg		99	µg/kg		93	µg/kg	
Benzo(a)anthracene	270	µg/kg		560	µg/kg		350	µg/kg	
Benzo(a)pyrene	330	µg/kg		700	µg/kg		400	µg/kg	
Benzo(g,h,i)perylene	510	µg/kg		850	µg/kg		640	µg/kg	
Chrysene	550	µg/kg		1,000	µg/kg		710	µg/kg	
Dibenz(a,h)anthracene	69	µg/kg		160	µg/kg		82	µg/kg	
Dibenzofuran	33	µg/kg	J	<99	µg/kg	U	43	µg/kg	
Fluoranthene	980	µg/kg		1,700	µg/kg		1,200	µg/kg	
Fluorene	37	µg/kg		<99	µg/kg	U	46	µg/kg	
Indeno(1,2,3-cd)pyrene	260	µg/kg		540	µg/kg		300	µg/kg	
Naphthalene	62	µg/kg		110	µg/kg		94	µg/kg	
Phenanthrene	500	µg/kg		820	µg/kg		610	µg/kg	
Pyrene	760	µg/kg		1,400	µg/kg		950	µg/kg	
Total Benzofluoranthenes	780	µg/kg		1,600	µg/kg		990	µg/kg	

Qualifiers

U	Non detect
Y	Non detect at raised reporting limit

APPENDIX J-6

2016 and 2017 Annual Sampling Report, South Storm Drain System and Source Tracing Within the Boeing Developmental Center (CALIBRE Systems, 2018)

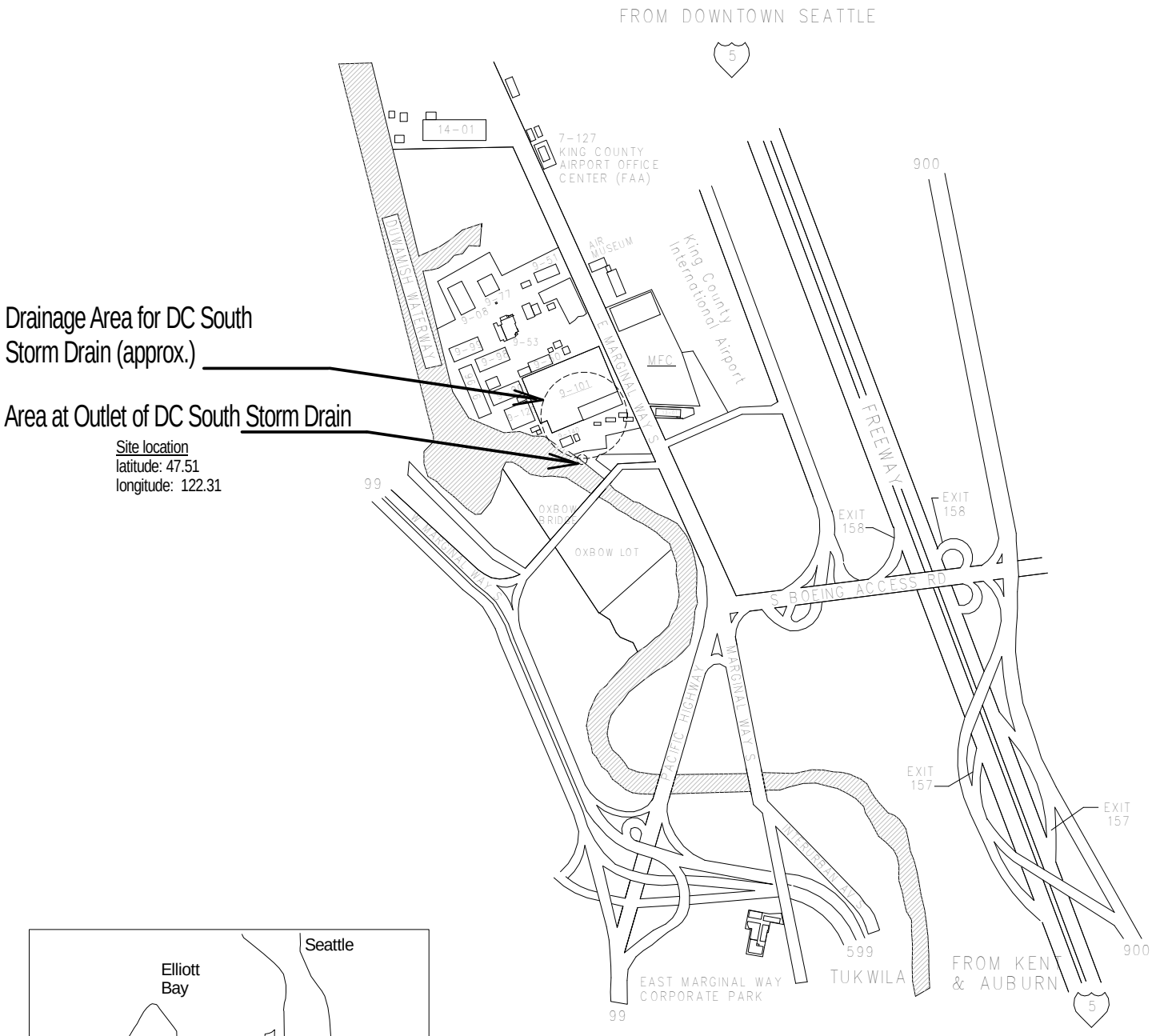
2016 and 2017 Annual Sampling Report
South Storm Drain System and Source Tracing
Within the Boeing Developmental Center

Prepared for:

The Boeing Company
Engineering Operations and Technology
EHS Remediation

Prepared by:
CALIBRE Systems

February 2018



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SUBTITLE

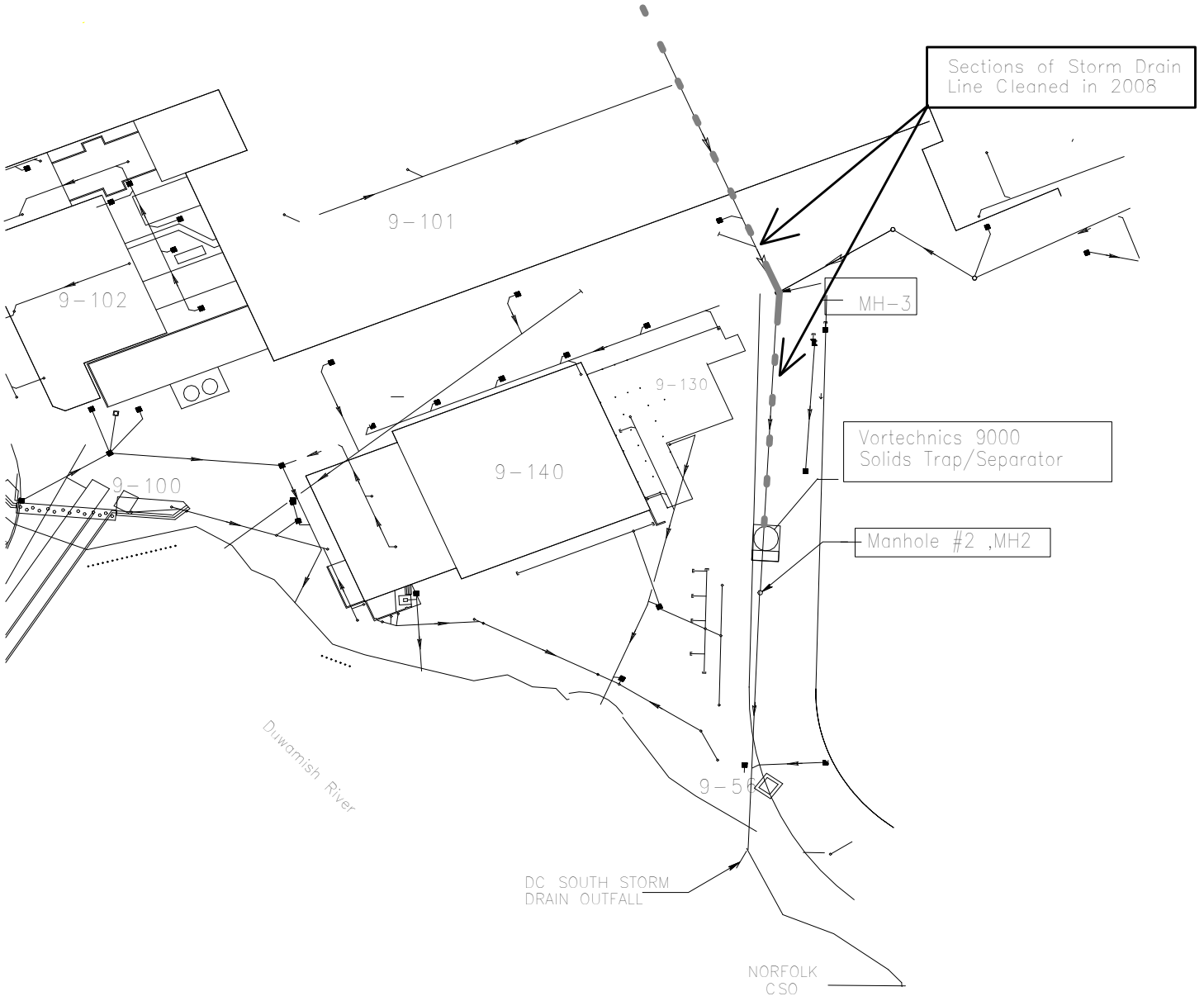
TITLE
DEVELOPMENTAL CENTER

CURRENT REVISION	SYMBOL	DATE 12/4/2013

FIGURE 1-1
SITE VICINITY MAP

JOB NO. K0187000	FILE DC Location map.skf

DWG NO.



BOEING®

CALIBRE Systems

APPROXIMATE SCALE IN FEET

0 100' 200'

N

Section of Storm Line Cleaned 2008

Figure 3-1
Location of Vortechnics Unit

ê

Appendix C
Historical Data Summary

Data from Annual Upland Sampling in Drain Line and Vortechnics Sediment Trap Cleanout

Sample Collection Point	Year	Laboratory Sample ID	Sampling Date	Total PCBs (µg/kg dw)	TOC (%)	Length of Time Filter Bags in Place
MH3 Upstream from Vortechnics Sediment Trap	2004	MH3-121604	12/16/04	20,000	19.70	3 months
	2005	Manhole 3 Filter Bag	09/15/05	61,500	22.70	1 year
	2006	Manhole 3 Bag	09/13/06	38,000	11.1	1 year
	2007	MH3	09/24/07	3,200	6.15	1 year
	2008	MH3	09/17/08	1,440	*	1 year
	2009	MH3	09/02/09	33,000	25.0	1 year
	2012	MH3-082812	08/28/12	15,400	17.3	1 year
	2013	Not Taken, filter missing.				
	2014	MH3-090914	09/09/14	2,700	NS	1 year
	2015	MH3-091015	09/10/15	6,800	12.7	1 year
Solids from Vortechnics Sediment Trap	2005	ST0905-1	09/15/05	15,100	9.95	
		ST0905-2	09/15/05	15,800	6.09	
	2006	SSS1091306	09/13/06	10,600	9.41	
		SSS2091306	09/13/06	11,600	13.3	
	2007	SSS1092407	09/24/07	14,700	11.5	
		SSS2092407	09/24/07	14,700	4.7	
	2008	SSS1091708	09/17/08	32,000	10.0	
		SSS2091708	09/17/08	13,000	8.14	
	2009	SSS01090209	09/02/09	21,700	8.38	
		SSS02090209	09/02/09	23,500	12.9	
	2010	SSS10100510	10/05/10	15,150	24.6	
		SSS20100510	10/05/10	13,580	24.8	
	2011	SSS01112111	11/21/11	16,300	19.9	
		SSS02112111	11/21/11	17,400	15.9	
	2012	SSS01-08282012	08/28/12	2,600	8.59	
		SSS02-08282012	08/28/12	2,300	11.9	
	2013	SSS01-091613	09/16/13	7,600	2.63	
		SSS02-091613	09/16/13	9,400	5.41	
	2014	SSS01-090914	09/09/14	1,280	7.48	
		SSS02-090914	09/09/14	1,070	10.5	
	2015	SSS01-091015	09/10/15	5,400	*	
		SSS02-091015	09/10/15	12,500	17.7	
	2016	OWS-2-062316	06/23/16	31,000	9.97	
		OWS-2B-062316	06/23/16	24,000		
		OWS-2-100516	10/05/16	43,100		
	2017	OWS-2-091917	09/19/17	24,500	17.4	
		OWS-2B-091917	09/19/17	28,800	32.2	
MH2 Downstream from Vortechnics Sediment Trap	2004	MH2-121604	12/16/04	7,100	13.80	3 months
	2005	Manhole 2 Filter Bag	09/15/05	12,600	16.60	1 year
	2006	Manhole 2 Bag	09/13/06	5,900	13.9	1year
	2007	MH2	9/24/2007	2,280	*	1year
MH2 Jar Sampler	2007	MH2Jar092407	9/24/2007	1,670	3.21	1year
	2008	Not Taken, filter missing.				
	2009	MH2	09/02/09	16,200	15.6	1 year
	2012	MH2-082812	08/28/12	930	11.6	1 year
	2013	MH2-091613	09/16/13	6,600	10.4	1 year
	2014	MH2-090914	09/09/14	1,710	NS	1 year
	2015	MH2-091015	09/10/15	5,000	9.43	1 year

Note: Filter bags were in place for only 3 months prior to the 2004 sampling event.
For all other years, filter bags were in place for the entire year.
* insufficient volume of solids for TOC analysis

Manhole Filter Sock Sampling Data Beginning 2010

Sample Collection Point	Year	Laboratory Sample ID	Sampling Date	Total PCBs (ug)*	Length of Time Filter Bags in Place
Manhole 2	2010	MH2-Filter Bag	10/5/2010	800	1 year
Manhole 2	2011	MH2-Filter Bag	11/21/2011	610	1 year
Manhole 3	2010	MH3-Filter Bag	10/5/2010	3,700	1 year
Manhole 3	2011	MH3-Filter Bag	11/21/2011	2,620	1 year

*Insufficient solids were available within the filter sock for a concentration analysis; alternatively the laboratory digested the entire filter sock and quantified the mass of PCBs present.

APPENDIX K

Report Excerpts—Sediment Sampling Data

- Appendix K-1. 2016 and 2017 Annual Sampling Report, South Storm Drain System and Source Tracing Within the Boeing Developmental Center (CALIBRE Systems, 2018)
- Appendix K-2. Data Report: Surface Sediment Sampling at Outfalls in the Lower Duwamish Waterway, Seattle, WA (Science Applications International Corporation, 2011)

APPENDIX K-1

2016 and 2017 Annual Sampling Report, South Storm Drain System and Source Tracing Within the Boeing Developmental Center (CALIBRE Systems, 2018)

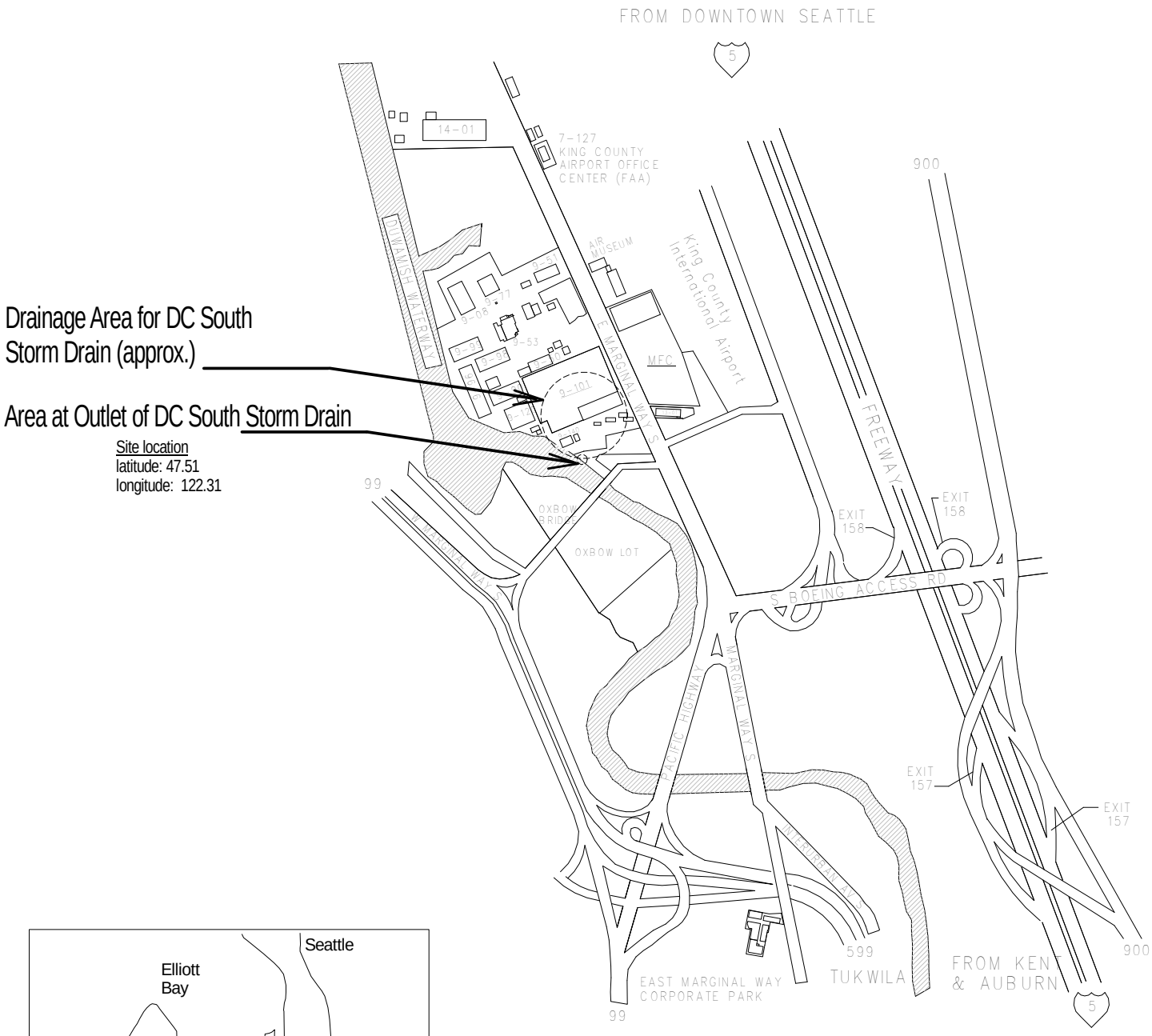
2016 and 2017 Annual Sampling Report
South Storm Drain System and Source Tracing
Within the Boeing Developmental Center

Prepared for:

The Boeing Company
Engineering Operations and Technology
EHS Remediation

Prepared by:
CALIBRE Systems

February 2018



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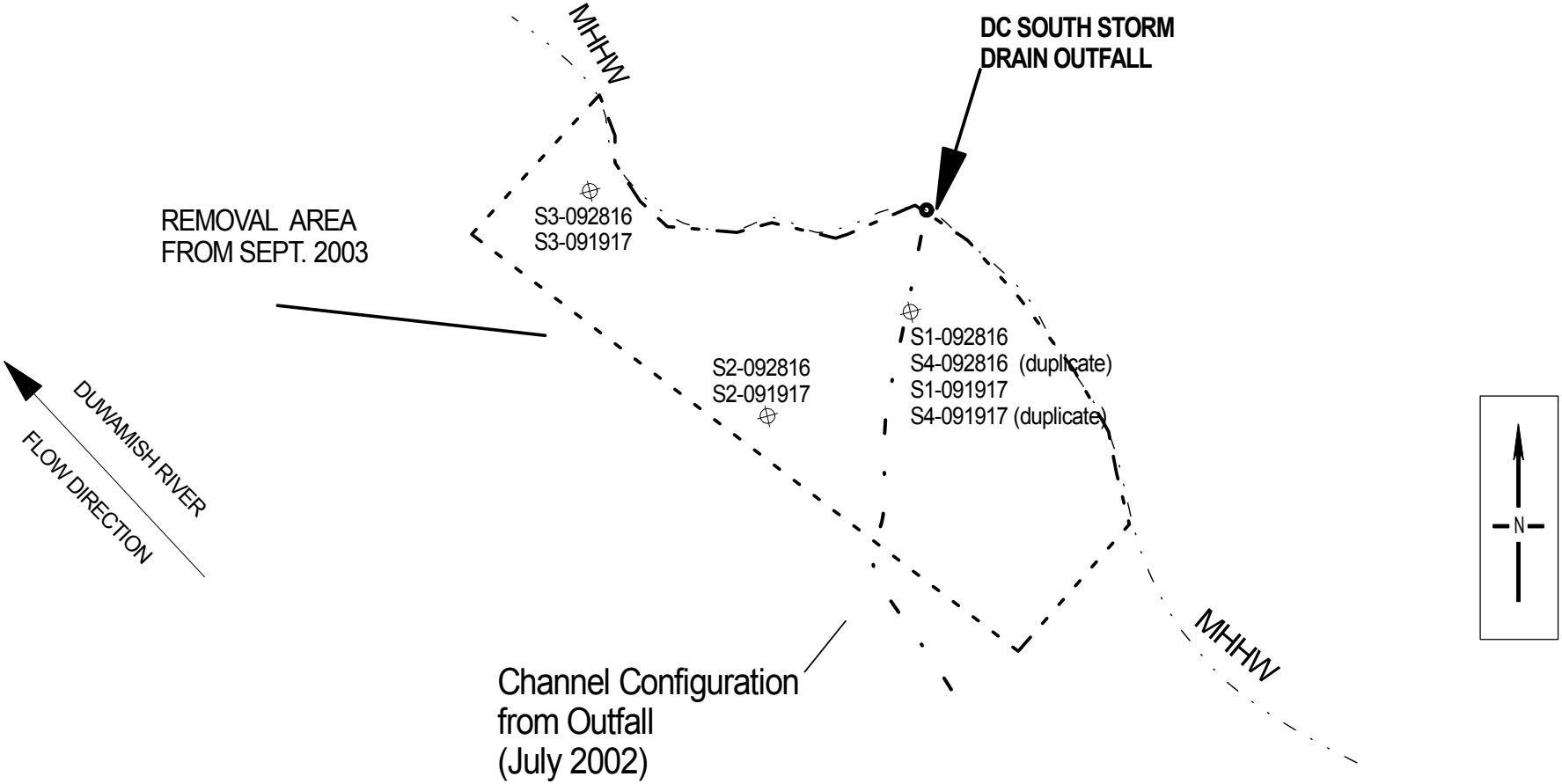
DEVELOPMENTAL CENTER

CURRENT REVISION	SYMBOL	DATE 12/4/2013

FIGURE 1-1
SITE VICINITY MAP

JOB NO. K0187000	FILE DC Location map.skf

DWG NO.



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LEGEND

S1 — SEDIMENT SAMPLING LOCATION, ALL SAMPLES TAKEN FROM 0-2" DEPTH

BOUNDARY OF 2003 REMOVAL AREA

0 25 50

Scale in Feet

Figure 2-1 Sediment Sampling Locations
September 2016 and 2017

Appendix C
Historical Data Summary

Data from Annual PCB Sampling on Cap in River

Station	Year	Laboratory Sample ID	Sampling Date	Total PCBs (µg/kg dw)	TOC (%)	Total PCBs OC-Normalized (mg/kg OC)
S1	2004	S01	09/13/04	27	0.242	11
	2005	S1-05	11/02/05	353	1.56	23
		S4-05 (duplicate of S1-05)	11/02/05	< 32	1.53	NA
	2007	S1-07	06/20/07	280	1.72	16
		S4-07 (duplicate of S1-07)	06/20/07	163	2.24	7
	2007	S1b07	09/24/07	138	1.04	13
		S4b07 (duplicate of S1b07)	09/24/07	204	1.19	17
	2009	S1-08	02/04/09	<33	1.73	NA
		S4-08	02/04/09	<32	2.56	NA
	2009	S-1-090209	09/02/09	1310	3.91	34
		S-4-090209	09/02/09	840	14.2	6
	2010	S-1-100510	10/05/10	517	2.57	20
		S-4-100510	10/05/10	560	3.95	14
	2011	S1-041111	11/04/11	670	2.87	23
		S4-041111	11/04/11	610	4.06	15
	2012	S1-082812	08/28/12	154	2.93	5
		S4-082812	08/28/12	240	3.42	7
	2013	S1-091613	09/16/13	49	0.762	6
		S4-091613	09/16/13	60	0.582	10
	2014	S1-090914	09/09/14	1790	2.32	77
	2014	S4-090914	09/09/14	770	2.2	35
	2015	S1-091015	09/10/15	270	2.63	10
	2015	S4-091015	09/10/15	530	3.00	18
	2016	S1-092816	09/28/16	779.2	3.35	23
	2016	S4-092816	09/28/16	749	2.85	26
	2017	S1-091917	09/19/17	920.4	2.87	32
	2017	S4-091917	09/19/17	472	2.74	17
S2	2004	S02	09/13/04	< 19	0.309	NA
		S06 (duplicate of S02)	09/13/04	< 19	0.128	NA
	2005	S2-05	11/02/05	< 31	1.31	NA
	2007	S2-07	06/20/07	< 19	1.27	NA
	2007	S2b07	09/24/07	<20	0.774	NA
	2009	S2-08	02/04/09	<32	1.38	NA
	2009	S-2-090209	09/02/09	<32	1.57	NA
	2010	S-2-100510	10/05/10	44	1.62	3
	2011	S2-041111	11/04/11	<32	1.48	NA
	2012	S2-082812	08/28/12	105	1.42	7
	2013	S2-091613	09/16/13	61	0.536	11
	2014	S2-090914	09/09/14	91	0.625	15
	2015	S2-091015	09/10/15	42	0.704	6
	2016	S2-092816	09/28/16	75.8	1.28	6
	2017	S2-091917	09/19/17	466	1.16	40
S3	2004	S03	09/13/04	< 20	0.186	NA
	2005	S3-05	11/02/05	< 31	0.53	NA
	2007	S3-07	06/20/07	<20	1.23	NA
	2007	S3b07	09/24/07	<19	1.57	NA
	2009	S3-08	02/04/09	<32	1.69	NA

Data from Annual PCB Sampling on Cap in River

Station	Year	Laboratory Sample ID	Sampling Date	Total PCBs (µg/kg dw)	TOC (%)	Total PCBs OC-Normalized (mg/kg OC)
	2009	S-3-090209	09/02/09	<33	3.06	NA
	2010	S-3-100510	10/05/10	<33	1.42	NA
	2011	S3-041111	11/4/2011	<33	2.26	NA
	2012	S3-082812	8/28/2012	<23	0.996	NA
	2013	S3-091613	9/16/2013	173	1.53	11
	2014	S3-090914	9/9/2014	<23	0.747	NA
	2015	S3-091015	09/10/15	<28	1.92	NA
	2016	S3-092816	09/28/16	147.7	1.3	11
	2017	S3-091917	09/19/17	286.5	1.06	27

APPENDIX K-2

Data Report: Surface Sediment Sampling at Outfalls in the Lower Duwamish Waterway, Seattle, WA (Science Applications International Corporation, 2011)

Surface Sediment Sampling at Outfalls in the Lower Duwamish Waterway Seattle, WA

Data Report

Prepared for

Toxics Cleanup Program
Northwest Regional Office
Washington State Department of Ecology
Bellevue, Washington

Prepared by

Science Applications International Corporation
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

October 2011

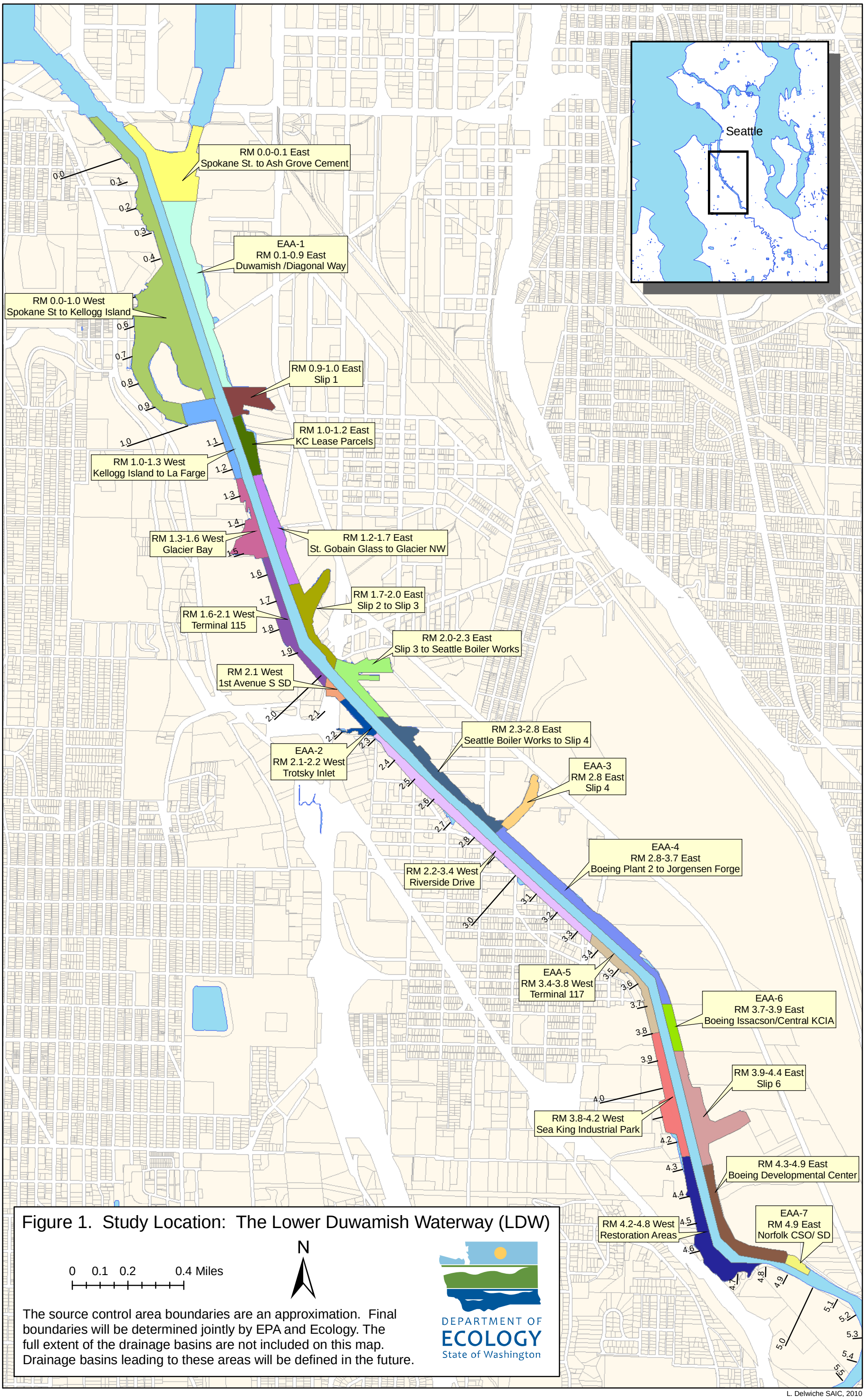


Figure 1. Study Location: The Lower Duwamish Waterway (LDW)

The source control area boundaries are an approximation. Final boundaries will be determined jointly by EPA and Ecology. The full extent of the drainage basins are not included on this map. Drainage basins leading to these areas will be defined in the future.

L. Delwiche SAIC, 2010

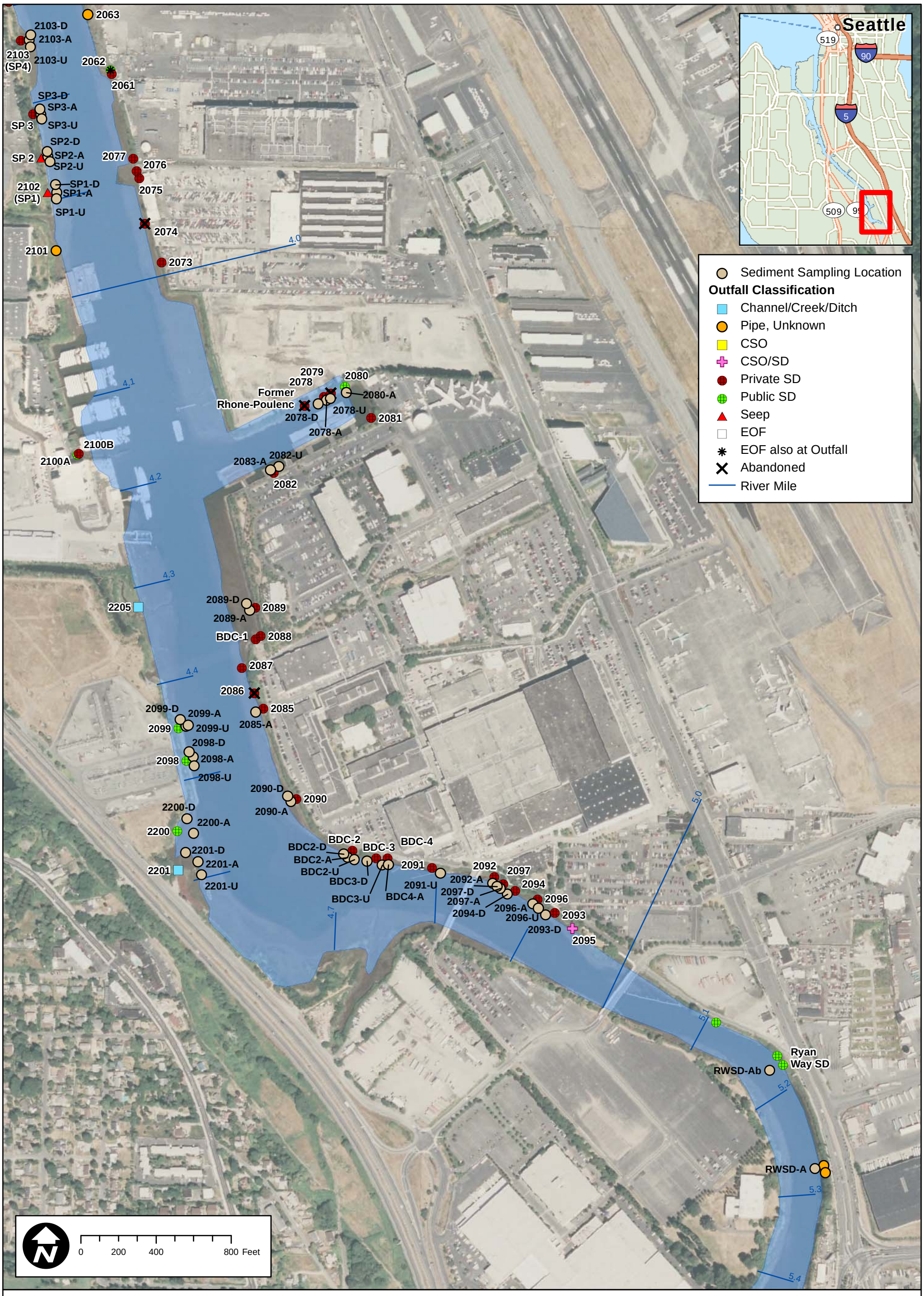
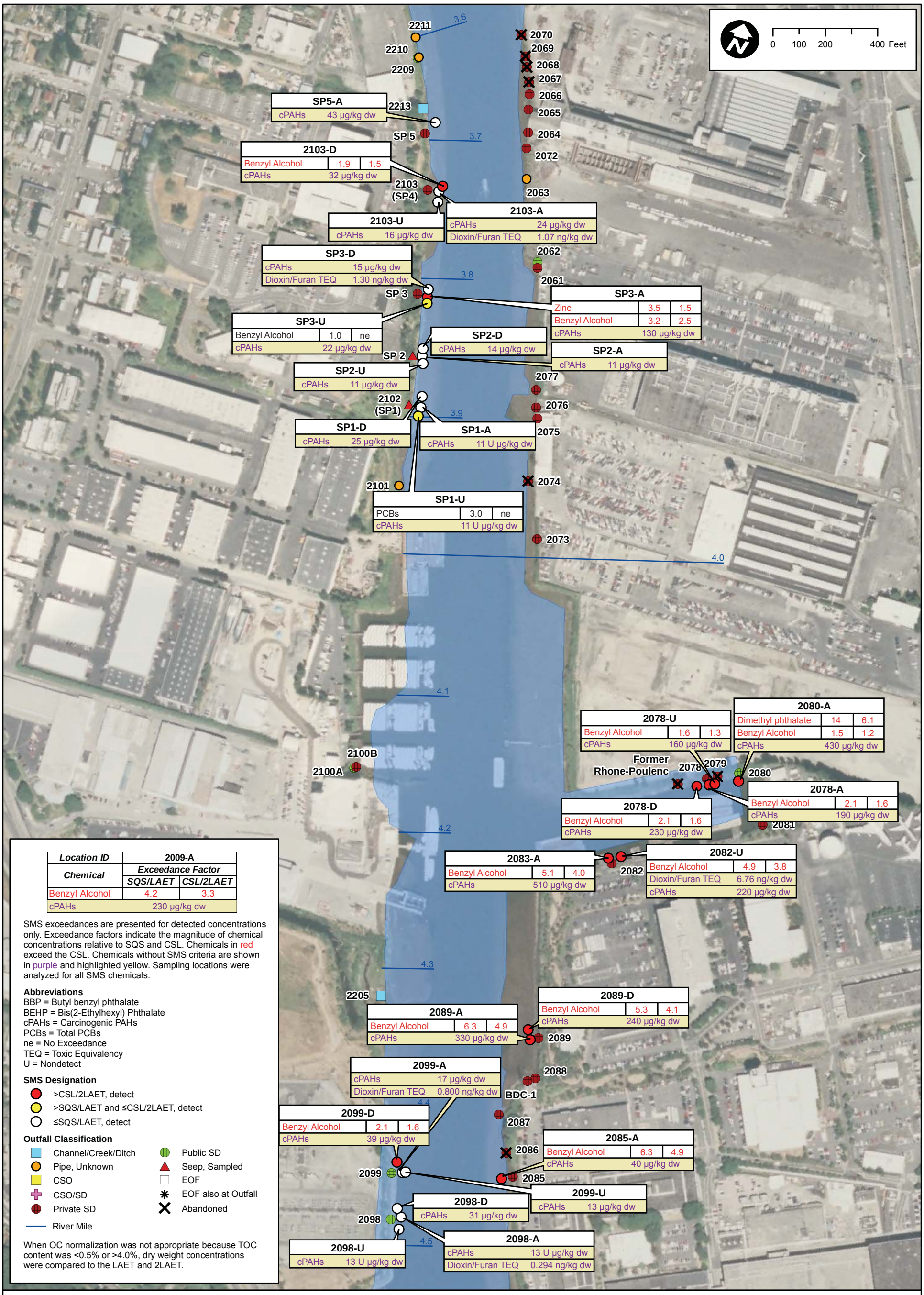


Figure 2d. LDW Outfalls and Surface Sediment Sampling Locations, River Mile 3.8 to 5.4

DEPARTMENT OF ECOLOGY
State of Washington

SAIC® From Science to Solutions

Coordinate System:
NAD 1983 StatePlane Washington North FIPS 4601 Feet
Prepared By: mlf
File: Fig_2_All_Locations_MapSeries.mxd
Illustrative purposes only.



Location ID	2009-A	
Chemical	Exceedance Factor	
	SQS/LAET	CSL/2LAET
Benzyl Alcohol	4.2	3.3
cPAHs	230 µg/kg dw	

SMS exceedances are presented for detected concentrations only. Exceedance factors indicate the magnitude of chemical concentrations relative to SQS and CSL. Chemicals in red exceed the CSL. Chemicals without SMS criteria are shown in purple and highlighted yellow. Sampling locations were analyzed for all SMS chemicals.

Abbreviations
BBP = Butyl benzyl phthalate
BEHP = Bis(2-Ethylhexyl) Phthalate
cPAHs = Carcinogenic PAHs
PCBs = Total PCBs
ne = No Exceedance
TEQ = Toxic Equivalency
U = Nondetect

SMS Designation
- >CSL/2LAET, detect
- >SQS/LAET and ≤CSL/2LAET, detect
- ≤SQS/LAET, detect

Outfall Classification
- Channel/Creek/Ditch
- Pipe, Unknown
- CSO
- CSO/SD
- Private SD
- Public SD
- Seep, Sampled
- EOF
- EOF also at Outfall
- Abandoned
- River Mile

When OC normalization was not appropriate because TOC content was <0.5% or >4.0%, dry weight concentrations were compared to the LAET and 2LAET.

DEPARTMENT OF ECOLOGY
State of Washington

Figure 3e. Surface sediment results, River Mile 3.6 to 4.5

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Coordinate System:
NAD 1983 StatePlane Washington North FIPS 4601 Feet
Prepared By: mlf
File: Fig_3_AllChem_BalloonMapSeries.mxd
Illustrative purposes only.

Location ID	2009-A	
Chemical	Exceedance Factor	
	SQS/LAET	CSL/2LAET
Benzyl Alcohol	4.2	3.3
cPAHs	230 µg/kg dw	

SMS exceedances are presented for detected concentrations only. Exceedance factors indicate the magnitude of chemical concentrations relative to SQS and CSL. Chemicals in red exceed the CSL. Chemicals without SMS criteria are shown in purple and highlighted yellow. Sampling locations were analyzed for all SMS chemicals.

Abbreviations
BBP = Butyl benzyl phthalate
BEHP = Bis(2-Ethylhexyl) Phthalate
cPAHs = Carcinogenic PAHs
PCBs = Total PCBs
ne = No Exceedance
TEQ = Toxic Equivalency
U = Nondetect

SMS Designation
- >CSL/2LAET, detect
- >SQS/LAET and ≤CSL/2LAET, detect
- ≤SQS/LAET, detect

Outfall Classification
- Channel/Creek/Ditch
- Pipe, Unknown
- CSO
- CSO/SD
- Private SD
- Public SD
- Seep, Sampled
- EOF
- EOF also at Outfall
- Abandoned
- River Mile

When OC normalization was not appropriate because TOC content was <0.5% or >4.0%, dry weight concentrations were compared to the LAET and 2LAET.

DEPARTMENT OF ECOLOGY
State of Washington

Figure 3 f. Surface sediment results, River Mile 4.5 to 5.8

SAIC® From Science to Solutions

Coordinate System:
NAD 1983 StatePlane Washington North FIPS 4601 Feet
Prepared By: mlf
File: Fig_3_AllChem_BalloonMapSeries.mxd
Illustrative purposes only.

Appendix A
Data Tables

Table of Contents:

Table A–1. LDW Outfall Surface Sediment Sample Results

Table A–2. LDW Outfall Surface Sediment Sample Results for Dioxins/Furans (ng TEQ/kg DW)

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Table A–4. LDW Outfall Surface Sediment Sample Results for Samples with TOC <0.5 or >4.0% Compared to Dry Weight SMS or AET Criteria

Table A–5. LDW Outfall Surface Sediment Sample Results Compared to Natural Background Concentrations for Four LDW RI Risk Driver Chemicals

Acronyms:

2LAET = second lowest apparent effects threshold
AET = apparent effects threshold
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
CSL = Washington State Cleanup Screening Level
DW = dry weight
HPAHs = high molecular weight polycyclic aromatic hydrocarbons
LAET = lowest apparent effects threshold
LDW = Lower Duwamish Waterway
LPAHs = low molecular weight polycyclic aromatic hydrocarbons
na = not analyzed
nd = nondetect
OC = organic carbon normalized
PAHs = polycyclic aromatic hydrocarbons
PCBs = polychlorinated biphenyls
RI = Remedial Investigation
RL = reporting limit
SMS = Washington State Sediment Management Standards
SQS = Washington State Sediment Quality Standards
SVOCs = semi-volatile organic compounds
WW = wet weight

Data Qualifiers:

J = estimated value
JN = estimated value with tentative identification
R = rejected
U = not detected
UJ = not detected at estimated RL

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2040-U	LDW-SS2078-A	LDW-SS2078-D	LDW-SS2078-U	LDW-SS2080-A	LDW-SS2082-U	LDW-SS2083-A	LDW-SS2085-A	LDW-SS2089-A
Metals (mg/kg DW)									
Arsenic	7	10	10	20	20	20	20	10	20
Cadmium	0.3 U	0.5	0.5 U	0.5 U	0.6	0.6	0.6	0.4	0.5
Chromium	11.7	32	31	32	35	34	32	28	30
Copper	15.6	61.7	59.9	60.5	60.1	58.4	56.7	37.2	46.6
Lead	9	20	18	21	24	20	19	11	15
Mercury	0.03 U	0.15	0.10	0.14	0.13	0.13	0.17	0.11	0.15
Silver	0.4 U	0.7 U	0.7 U	0.8 U	0.8 U	0.8 U	0.8 U	0.6 U	0.7 U
Zinc	55	119	100	120	135	115	111	81	96
PAHs (µg/kg DW)									
Acenaphthene	20 U	5.8 J	8.5 J	6.7 J	11 J	20 U	15 J	19 U	20 U
Acenaphthylene	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
Anthracene	20 U	16 J	20	12 J	50	26	52	19 U	26
Benzo(a)anthracene	14 J	110	140	85	290	140	320	24	190
Benzofluoranthene	26	310	370	260	700	370	860	66	600
Benzo(g,h,i)perylene	20 U	110	120	82	220	120	280	28	190
Benzo(a)pyrene	12 J	120	150	100	280	140	330	26	210
Chrysene	20	190	220	140	470	220	520	42	310
Dibenzo(a,h)anthracene	4.9 U	42	43	33	75	37	86	6.1	51
Dibenzofuran	20 U	6.8 J	8.5 J	6.7 J	14 J	14 J	20	19 U	12 J
Fluoranthene	22	300	400	260	840	390	980	71	580
Fluorene	20 U	8.7 J	11 J	8.6 J	20	14 J	23	19 U	11 J
Indeno(1,2,3-cd)pyrene	20 U	96	110	78	200	100	260	22	180
1-Methylnaphthalene	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
2-Methylnaphthalene	20 U	19 U	4.7 J	19 U	20 U	20 U	19 U	19 U	20 U
Naphthalene	20 U	5.8 J	6.6 J	19 U	4.9 J	14 J	16 J	10 J	14 J
Phenanthrene	20 U	140	200	120	360	160	410	44	260
Pyrene	26	320	460	290	760	350	890	64	540
Total HPAHs	120 J	1600	2000	1300	3800	1900	4500	350	2900
Total LPAHs	20 U	180 J	250 J	150 J	450 J	210 J	520 J	54 J	310 J
cPAHs	18 J	190	230	160	430	220	510	40	330
Phthalates (µg/kg DW)									
Butyl benzyl phthalate	5.3 J	20 J	19 J	15 J	38 J	21	18	6.0	15 J
Dibutyl phthalate	69	7.7 J	19 U	9.6 J	20 U	20 U	19 U	19 U	20 U
Di-n-octyl phthalate	20 U	19 U	12 J	19 U	7.8 J	20 U	19 U	19 U	11 J
Diethyl phthalate	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	12 J
Dimethyl phthalate	4.9 U	33	120	32	970	4.2 J	4.5 J	4.7 U	4.9 U
Bis(2-ethylhexyl)phthalate	40 U	110	130	130	220	180	170	84	140

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2040-U	LDW-SS2078-A	LDW-SS2078-D	LDW-SS2078-U	LDW-SS2080-A	LDW-SS2082-U	LDW-SS2083-A	LDW-SS2085-A	LDW-SS2089-A
Phenols (µg/kg DW)									
2,4,5-Trichlorophenol	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U
2,4,6-Trichlorophenol	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U
2,4-Dichlorophenol	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 UJ
2,4-Dimethylphenol	4.9 U	4.8 UJ	4.7 UJ	4.8 UJ	4.9 UJ	2.8 J	2.4 J	2.7 J	4.9 U
2,4-Dinitrophenol	210 UJ	210 U	200 U	200 U	210 U	R	200 UJ	200 U	210 U
2-Chlorophenol	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
2-Nitrophenol	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U
4,6-Dinitro-2-Methylphenol	200 U	190 U	190 U	190 U	200 U	R	190 U	190 U	200 U
4-Chloro-3-methylphenol	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U
2-Methylphenol	4.9 U	4.8 U	4.7 U	4.8 U	4.9 U	4.0 J	4.7 J	3.2 J	3.7 J
4-Methylphenol	58	14 J	9.5 J	10 J	13 J	20	21	16 J	20
4-Nitrophenol	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U
Pentachlorophenol	24 U	24 UJ	24 UJ	24 UJ	24 UJ	25 UJ	24 UJ	24 UJ	25 UJ
Phenol	20 U	16 J	16 J	14 J	16 J	34	30	32	31
Other SVOCs (µg/kg DW)									
Benzoic Acid	45 J	140 J	140 J	100 J	98 J	370	380	420	550
Benzyl Alcohol	13 J	120 J	120 J	93 J	86 J	280	290	360	360
4-Bromophenyl phenyl ether	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 UJ
Carbazole	20 U	23	33	21	56	34	97	19 U	58
Bis(2-chloro-1-methylethyl) ether	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
4-Chloroaniline	98 U	97 U	95 U	96 U	98 U	R	96 U	94 U	98 U
2-Chloronaphthalene	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
Bis(2-Chloroethoxy)Methane	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
Bis(2-Chloroethyl)Ether	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
4-Chlorophenyl-phenylether	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 UJ
1,2-Dichlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	4.9 U	5.0 U	4.8 U	4.7 U	4.9 U
1,3-Dichlorobenzene	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
1,4-Dichlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	4.9 U	5.0 U	4.8 U	4.7 U	4.9 U
3,3'-Dichlorobenzidine	98 U	97 U	95 U	96 U	98 U	R	96 U	94 U	98 U
2,4-Dinitrotoluene	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U
2,6-Dinitrotoluene	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U
Hexachlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	1.0 J	5.0 U	4.8 U	4.7 U	4.9 U
Hexachlorobutadiene	4.9 U	4.8 U	4.7 U	4.8 U	4.9 U	5.0 U	4.8 U	4.7 U	4.9 U
Hexachlorocyclopentadiene	98 U	97 UJ	95 UJ	96 UJ	98 UJ	R	96 UJ	94 UJ	98 UJ
Hexachloroethane	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
Isophorone	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
2-Nitroaniline	98 U	97 U	95 U	96 U	98 U	99 U	96 U	94 U	98 U

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2040-U	LDW-SS2078-A	LDW-SS2078-D	LDW-SS2078-U	LDW-SS2080-A	LDW-SS2082-U	LDW-SS2083-A	LDW-SS2085-A	LDW-SS2089-A
4-Nitroaniline	98 U	97 U	95 U	96 U	98 U	R	96 U	94 U	98 U
3-Nitroaniline	98 U	97 U	95 U	96 U	98 U	R	96 U	94 U	98 U
Nitrobenzene	20 U	19 U	19 U	19 U	20 U	20 U	19 U	19 U	20 U
N-Nitrosodiphenylamine	4.9 U	4.8 U	4.7 U	4.8 U	4.9 U	5.0 U	4.8 U	4.7 U	4.9 U
N-Nitrosodi-n-propylamine	4.9 U	4.8 U	4.7 U	4.8 U	4.9 U	5.0 U	4.8 U	4.7 U	4.9 U
1,2,4-Trichlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	4.9 U	5.0 U	4.8 U	4.7 U	4.9 U
Aniline	130 U	120 UJ	120 UJ	120 UJ	130 UJ	R	120 U	120 U	130 U
N-Nitrosodimethylamine	24 U	24 U	24 U	24 U	24 U	25 U	24 U	24 U	25 U
PCB Aroclors (µg/kg DW)									
Aroclor 1016	3.9 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	3.9 U	4.0 U
Aroclor 1221	3.9 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	3.9 U	4.0 U
Aroclor 1232	3.9 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	3.9 U	4.0 U
Aroclor 1242	3.9 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	3.9 U	4.0 U
Aroclor 1248	5.8 U	25	14	31	21	8.2	6.0	3.9 U	10
Aroclor 1254	12	35	18	35	30	9.3	6.7	5.6	11
Aroclor 1260	7.4	21	12	19	17	5.5	4.2	3.9 U	4.8
Total PCBs	19	81	44	85	68	23	17	5.6	26
Grain size (% DW)									
Phi Scale <-1	1.4	0.3	10.5	0.1 U	0.4	0.1 U	0.1 U	0.1 U	0.1 U
Phi Scale -1 to 0	1.1	1.7	9.2	2.3	2.8	1.2	1.3	1.0	2.0
Phi Scale 0 to 1	16.1	3.0	8.8	2.4	5.3	1.0	1.5	0.9	1.7
Phi Scale 1 to 2	64.3	2.5	6.3	2.0	5.6	0.4	0.6	1.0	0.6
Phi Scale 2 to 3	11.1	1.4	2.3	1.1	1.8	0.6	1.1	3.8	0.9
Phi Scale 3 to 4	2.7	1.1	1.2	1.0	1.2	2.8	3.6	15.5	5.6
Phi Scale 4 to 5	3.4 U	3.0	3.2	5.6	5.9	7.1	9.2	18.3	13.2
Phi Scale 5 to 6	3.4 U	21.8	14.0	23.7	22.6	27.2	26.0	21.2	26.8
Phi Scale 6 to 7	3.4 U	27.8	15.6	28.1	23.8	28.0	26.4	14.4	22.6
Phi Scale 7 to 8	3.4 U	16.5	12.7	14.8	12.8	14.0	13.0	9.5	11.4
Phi Scale 8 to 9	3.4 U	7.8	6.6	6.9	6.6	6.1	6.3	5.6	5.5
Phi Scale 9 to 10	3.4 U	4.6	4.1	4.1	3.8	4.0	3.6	3.8	3.6
Phi Scale >10	3.4 U	8.5	5.5	7.9	7.3	7.8	7.5	4.9	6.2
Total Clay (<0.004 mm - 0.004 mm)	3.4 U	20.9	16.2	18.9	17.7	17.9	17.4	14.3	15.3
Total Silt (0.06 mm - 0.004 mm)	3.4 U	69.1	45.5	72.2	65.1	76.3	74.6	63.4	74.0
Total Fines (Silt/Clay)	3.4	90.0	61.7	91.1	82.9	94.1	92.0	77.8	89.3
Total Sand (<2.0 mm - 0.06 mm)	95.3	9.7	27.8	8.8	16.7	6.0	8.1	22.2	10.8
Total Gravel (>2.0 mm)	1.4	0.3	10.5	0.1 U	0.4	0.1 U	0.1 U	0.1 U	0.1 U
Conventionals									
Total Organic Carbon (% DW)	0.831	3.13	3.27	2.23	4.17	4.00	2.66	2.35	3.53
Total Solids (% WW)	74.30	38.10	43.00	36.10	35.00	36.70	37.90	48.20	40.30

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2089-D	LDW-SS2090-A	LDW-SS2090-D	LDW-SS2091-U	LDW-SS2092-A	LDW-SS2093-D	LDW-SS2094-D	LDW-SS2096-A	LDW-SS2096-U
Metals (mg/kg DW)									
Arsenic	10	10	20	9	10	7	10	9	10
Cadmium	0.5	0.5	0.5	0.4	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U
Chromium	29	30	31	21.4	27	15.1	25	20.2	18.9
Copper	44.1	42.3	42.9	29.4	34.0	16.2	34.2	22.8	21.2
Lead	14	15	17	10	11	6	13	12	11
Mercury	0.13	0.17	0.11	0.06	0.07	0.03 U	0.10	0.06	0.04
Silver	0.7 U	0.7 U	0.7 U	0.5 U	0.6 U	0.4 U	0.6 U	0.4 U	0.4 U
Zinc	88	95	98	66	79	53	80	63	69
PAHs (µg/kg DW)									
Acenaphthene	19 U	19 U	62	14 J	19 U	18 U	20 U	19 U	19 U
Acenaphthylene	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
Anthracene	19	19 U	120	19 U	19 U	18 U	20 U	18 J	13 J
Benzo(a)anthracene	130	35	240	17 J	38	18 U	30	120	120
Benzofluoranthene	420	86	350	52	94	18	77	300	300
Benzo(g,h,i)perylene	150	34	110	19	36	18 U	31	110	110
Benzo(a)pyrene	150	36	200	19	42	18 U	32	120	120
Chrysene	220	53	270	30	56	13 J	51	180	170
Dibenzo(a,h)anthracene	38	7.6	36	4.3 J	9.6 J	4.6 U	9.0	33	34
Dibenzofuran	11 J	19 U	27	19 U	19 U	18 U	20 U	19 U	19 U
Fluoranthene	440	95	560	51	110	22	84	360	340
Fluorene	11 J	19 U	58	19 U	19 U	18 U	20 U	19 U	19 U
Indeno(1,2,3-cd)pyrene	140	29	110	16 J	32	18 U	25	100	100
1-Methylnaphthalene	19 U	19 U	19 U	19 U	19 U	11 J	17 J	19 U	19 U
2-Methylnaphthalene	19 U	19 U	11 J	19 U	19 U	9.2 J	20 U	19 U	19 U
Naphthalene	13 J	19 U	17 J	19 U	19 U	18 U	20 U	19 U	19 U
Phenanthrene	190	40	530	26	50	15 J	44	160	120
Pyrene	410	92	630	43	100	20	79	300	280
Total HPAHs	2100	470	2500	250 J	520 J	73 J	420	1600	1600
Total LPAHs	230 J	40	790 J	40 J	50	15 J	44	180 J	130 J
cPAHs	240	55	290	30 J	63 J	14 J	49	190	190
Phthalates (µg/kg DW)									
Butyl benzyl phthalate	11 J	8.2	12	8.2	5.3 J	4.6 U	9.1 J	3.1 J	3.9 J
Dibutyl phthalate	19 U	12 J	19 U	19 U	19 U	18 U	20 U	19 U	19 U
Di-n-octyl phthalate	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
Diethyl phthalate	19 U	19 U	44	19 U	51 U	18 U	20 U	19 U	19 U
Dimethyl phthalate	2.5 J	2.9 J	4.7 U	4.8 U	4.8 U	4.6 U	2.9 J	4.7 U	4.8 U
Bis(2-ethylhexyl)phthalate	160	130	130	67	65 U	38 U	140	49 U	22 U

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2089-D	LDW-SS2090-A	LDW-SS2090-D	LDW-SS2091-U	LDW-SS2092-A	LDW-SS2093-D	LDW-SS2094-D	LDW-SS2096-A	LDW-SS2096-U
Phenols (µg/kg DW)									
2,4,5-Trichlorophenol	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
2,4,6-Trichlorophenol	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
2,4-Dichlorophenol	97 U	96 U	93 U	96 UJ	96 U	92 U	99 U	94 U	97 U
2,4-Dimethylphenol	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	2.7 J	4.7 U	4.8 U
2,4-Dinitrophenol	210 UJ	200 UJ	200 UJ	200 U	200 U	200 U	210 U	200 U	210 U
2-Chlorophenol	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
2-Nitrophenol	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
4,6-Dinitro-2-Methylphenol	190 U	190 U	190 U	190 U	190 U	180 U	200 U	190 U	190 U
4-Chloro-3-methylphenol	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
2-Methylphenol	2.9 J	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
4-Methylphenol	18 J	9.6 J	11 J	19 U	14 J	18 U	25	19 U	19 U
4-Nitrophenol	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
Pentachlorophenol	24 UJ	24 UJ	23 UJ	24 UJ	24 UJ	23 UJ	25 UJ	24 UJ	24 UJ
Phenol	24	14 J	17 J	19 U	26	18 U	26	12 J	19 U
Other SVOCs (µg/kg DW)									
Benzoic Acid	400	210	250	190 U	280	180 U	310	140 J	68 J
Benzyl Alcohol	300	130	150	31	250	6.5	220	68	17
4-Bromophenyl phenyl ether	19 U	19 U	19 U	19 UJ	19 U	18 U	20 U	19 U	19 U
Carbazole	44	19 U	50	19 U	19 U	18 U	20 U	31	27
Bis(2-chloro-1-methylethyl) ether	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
4-Chloroaniline	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
2-Chloronaphthalene	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
Bis(2-Chloroethoxy)Methane	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
Bis(2-Chloroethyl)Ether	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
4-Chlorophenyl-phenylether	19 U	19 U	19 U	19 UJ	19 U	18 U	20 U	19 U	19 U
1,2-Dichlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
1,3-Dichlorobenzene	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
1,4-Dichlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
3,3'-Dichlorobenzidine	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
2,4-Dinitrotoluene	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
2,6-Dinitrotoluene	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
Hexachlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
Hexachlorobutadiene	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
Hexachlorocyclopentadiene	97 UJ	96 UJ	93 UJ	96 UJ	96 UJ	92 UJ	99 UJ	94 UJ	97 UJ
Hexachloroethane	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
Isophorone	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
2-Nitroaniline	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2089-D	LDW-SS2090-A	LDW-SS2090-D	LDW-SS2091-U	LDW-SS2092-A	LDW-SS2093-D	LDW-SS2094-D	LDW-SS2096-A	LDW-SS2096-U
4-Nitroaniline	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
3-Nitroaniline	97 U	96 U	93 U	96 U	96 U	92 U	99 U	94 U	97 U
Nitrobenzene	19 U	19 U	19 U	19 U	19 U	18 U	20 U	19 U	19 U
N-Nitrosodiphenylamine	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
N-Nitrosodi-n-propylamine	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
1,2,4-Trichlorobenzene	4.9 U	4.8 U	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U
Aniline	130 U	120 U	120 U	120 U	120 UJ	120 UJ	130 UJ	23 J	120 UJ
N-Nitrosodimethylamine	24 U	24 U	23 U	24 U	24 U	23 U	25 U	24 U	24 U
PCB Aroclors (µg/kg DW)									
Aroclor 1016	4.0 U	4.0 U	3.9 U	3.9 U	3.9 U	3.9 U	4.0 U	7.2 U	3.9 U
Aroclor 1221	4.0 U	4.0 U	3.9 U	3.9 U	3.9 U	3.9 U	4.0 U	7.2 U	3.9 U
Aroclor 1232	4.0 U	4.0 U	3.9 U	3.9 U	3.9 U	3.9 U	4.0 U	7.2 U	3.9 U
Aroclor 1242	4.0 U	4.0 U	3.9 U	3.9 U	3.9 U	3.9 U	4.0 U	7.2 U	3.9 U
Aroclor 1248	4.0 U	5.9 U	14 U	14	37	20	18	26	11
Aroclor 1254	4.0 U	7.1	30	9.6	22	12	16	52	16
Aroclor 1260	4.0 U	6.4	32 JN	3.9 U	7.5	3.1 J	8.9	21	5.4
Total PCBs	4.0 U	14	62 JN	24	67	35 J	43	99	32
Grain size (% DW)									
Phi Scale <-1	0.1 U	0.1	0.1 U	0.1	0.1	0.8	0.1 U	0.8	0.2
Phi Scale -1 to 0	1.8	1.4	1.8	0.6	1.0	4.3	1.6	1.7	1.1
Phi Scale 0 to 1	1.2	1.5	1.5	1.6	1.5	24.4	5.5	10.9	12.4
Phi Scale 1 to 2	0.7	2.9	1.3	14.8	1.8	43.4	8.8	35.9	38.1
Phi Scale 2 to 3	1.4	4.8	2.8	23.5	5.4	8.3	10.9	14.6	7.2
Phi Scale 3 to 4	6.2	7.5	8.5	19.6	18.4	8.8	13.0	6.9	5.4
Phi Scale 4 to 5	12.9	16.5	19.1	12.4	21.5	4.3	14.6	8.1	7.0
Phi Scale 5 to 6	28.9	20.6	21.2	7.5	18.1	1.9	19.9	6.6	8.7
Phi Scale 6 to 7	21.7	17.9	19.0	6.4	12.1	1.4	12.9	5.3	6.6
Phi Scale 7 to 8	11.0	10.9	10.4	4.5	8.4	0.8	5.4	3.4	4.9
Phi Scale 8 to 9	5.3	6.1	5.1	3.3	5.0	0.7	2.2	2.6	3.3
Phi Scale 9 to 10	3.2	3.8	3.5	2.1	3.1	0.5	1.7	1.5	2.4
Phi Scale >10	5.8	5.9	5.6	3.6	3.5	0.5	3.5	1.6	2.7
Total Clay (<0.004 mm - 0.004 mm)	14.3	15.8	14.2	9.0	11.6	1.7	7.4	5.7	8.4
Total Silt (0.06 mm - 0.004 mm)	74.5	65.9	69.7	30.8	60.1	8.4	52.8	23.4	27.2
Total Fines (Silt/Clay)	88.8	81.9	83.9	39.8	71.7	10.1	60.2	29.2	35.6
Total Sand (<2.0 mm - 0.06 mm)	11.3	18.1	15.9	60.1	28.1	89.2	39.8	70.0	64.2
Total Gravel (>2.0 mm)	0.1 U	0.1	0.1 U	0.1	0.1	0.8	0.1 U	0.8	0.2
Conventionals									
Total Organic Carbon (% DW)	3.31	3.32	3.24	1.93	1.99	1.20	2.46	2.61	2.78
Total Solids (% WW)	41.60	44.10	44.90	57.80	49.00	74.00	47.40	67.30	70.00

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2097-A	LDW-SS2097-D	LDW-SS2098-A	LDW-SS2098-D	LDW-SS2098-U	LDW-SS2099-A	LDW-SS2099-D	LDW-SS2099-U	LDW-SS2103-A
Metals (mg/kg DW)									
Arsenic	10	10	7	7	6 U	7	10 U	8	9
Cadmium	0.4 U	0.4	0.3	0.3 U	0.3 U	0.3	0.6	0.3 U	0.3 U
Chromium	24.8	28	17.8	17.3	14.2	13.1	27	14.1	16.5
Copper	30.1	39.0	15.0	17.2	12.2	19.3 J	39.8 J	15.9 J	21.6
Lead	12	20	6	5	3	6 J	13 J	4 J	10
Mercury	0.06	0.11	0.03 U	0.03	0.03 U	0.02 U	0.10	0.03 U	0.04
Silver	0.5 U	0.6 U	0.4 U	0.4 U	0.4 U	0.4 U	0.7 U	0.4 U	0.5 U
Zinc	69	90	52	52	45	52 J	89 J	47 J	57
PAHs (µg/kg DW)									
Acenaphthene	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Acenaphthylene	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Anthracene	19 U	14 J	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Benzo(a)anthracene	29	67	19 U	38	19 U	13 J	24	19 U	19
Benzofluoranthene	60	130	19 U	37	19 U	26	61	7.7 J	36
Benzo(g,h,i)perylene	25	52	19 U	13 J	19 U	11 J	25	19 U	14 J
Benzo(a)pyrene	25	60	19 U	18 J	19 U	11 J	25	19 U	16 J
Chrysene	40	85	19 U	37	19 U	16 J	40	5.7 J	26
Dibenzo(a,h)anthracene	5.7	16 J	4.7 U	10	4.8 U	4.9 U	6.8	4.8 U	4.8 U
Dibenzofuran	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Fluoranthene	80	170	17 J	64	14 J	26	63	9.6 J	53
Fluorene	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Indeno(1,2,3-cd)pyrene	21	47	19 U	10 J	19 U	20 U	21	19 U	12 J
1-Methylnaphthalene	19 U	20 U	19 U	10 J	19 U	20 U	19 U	19 U	19 U
2-Methylnaphthalene	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Naphthalene	9.6 J	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Phenanthrene	47	87	10 J	38	19 U	21	28	7.7 J	25
Pyrene	71	150	18 J	68	14 J	33	64	9.6 J	48
Total HPAHs	360	780 J	35 J	300 J	28 J	140 J	330	33 J	220 J
Total LPAHs	57 J	100 J	10 J	38	19 U	21	28	7.7 J	25
cPAHs	39	92 J	13 U	31 J	13 U	17 J	39	13 J	24 J
Phthalates (µg/kg DW)									
Butyl benzyl phthalate	6.2 J	11 J	4.7 U	7.3 J	4.8 U	4.9 U	9.9	4.8 U	22 J
Dibutyl phthalate	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Di-n-octyl phthalate	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Diethyl phthalate	19 U	20 U	81	19 U	19 U	20 U	9.4 J	4.8 J	19 U
Dimethyl phthalate	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	6.7	5.6	4.8 U	4.8 U
Bis(2-ethylhexyl)phthalate	73 U	120	35 U	43 U	28 U	24 U	72 U	31 U	44 U

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2097-A	LDW-SS2097-D	LDW-SS2098-A	LDW-SS2098-D	LDW-SS2098-U	LDW-SS2099-A	LDW-SS2099-D	LDW-SS2099-U	LDW-SS2103-A
Phenols (µg/kg DW)									
2,4,5-Trichlorophenol	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
2,4,6-Trichlorophenol	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
2,4-Dichlorophenol	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
2,4-Dimethylphenol	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
2,4-Dinitrophenol	210 U	210 U	200 UJ	200 UJ	200 UJ	210 U	200 U	200 UJ	200 UJ
2-Chlorophenol	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
2-Nitrophenol	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
4,6-Dinitro-2-Methylphenol	190 U	200 U	190 U	190 U	190 U	200 U	190 U	190 U	190 U
4-Chloro-3-methylphenol	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
2-Methylphenol	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
4-Methylphenol	12 J	22	19 U	19 U	19 U	22	21	19 U	260
4-Nitrophenol	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
Pentachlorophenol	24 UJ	24 UJ	24 U	24 U	24 U	24 UJ	24 UJ	24 U	24 U
Phenol	9.6 J	23	19 U	12 J	19 U	20 U	16 J	19 U	17 J
Other SVOCs (µg/kg DW)									
Benzoic Acid	120 J	300	35 J	48 J	190 U	200 U	190	190 U	68 J
Benzyl Alcohol	76	220	10	10 J	5.4	15 J	120 J	6.7 J	37
4-Bromophenyl phenyl ether	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Carbazole	19 U	17 J	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Bis(2-chloro-1-methylethyl) ether	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
4-Chloroaniline	96 U	97 U	94 U	95 UJ	96 U	98 U	94 U	96 U	96 U
2-Chloronaphthalene	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Bis(2-Chloroethoxy)Methane	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Bis(2-Chloroethyl)Ether	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	30
4-Chlorophenyl-phenylether	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
1,2-Dichlorobenzene	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
1,3-Dichlorobenzene	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
1,4-Dichlorobenzene	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
3,3'-Dichlorobenzidine	96 U	97 U	94 U	95 UJ	96 U	98 U	94 U	96 U	96 U
2,4-Dinitrotoluene	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
2,6-Dinitrotoluene	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
Hexachlorobenzene	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
Hexachlorobutadiene	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
Hexachlorocyclopentadiene	96 UJ	97 UJ	94 U	95 UJ	96 U	98 UJ	94 UJ	96 UJ	96 U
Hexachloroethane	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
Isophorone	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
2-Nitroaniline	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS2097-A	LDW-SS2097-D	LDW-SS2098-A	LDW-SS2098-D	LDW-SS2098-U	LDW-SS2099-A	LDW-SS2099-D	LDW-SS2099-U	LDW-SS2103-A
4-Nitroaniline	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
3-Nitroaniline	96 U	97 U	94 U	95 U	96 U	98 U	94 U	96 U	96 U
Nitrobenzene	19 U	20 U	19 U	19 U	19 U	20 U	19 U	19 U	19 U
N-Nitrosodiphenylamine	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
N-Nitrosodi-n-propylamine	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
1,2,4-Trichlorobenzene	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U	4.8 U
Aniline	120 UJ	130 UJ	120 U	120 UJ	120 U	130 U	120 U	120 U	120 U
N-Nitrosodimethylamine	24 U	24 U	24 U	24 U	24 U	24 U	24 U	24 U	24 U
PCB Aroclors (µg/kg DW)									
Aroclor 1016	4.0 U	3.9 U	3.9 U	3.8 U	3.9 U	3.8 U	3.9 U	3.7 U	3.9 U
Aroclor 1221	4.0 U	3.9 U	3.9 U	3.8 U	3.9 U	3.8 U	3.9 U	3.7 U	3.9 U
Aroclor 1232	4.0 U	3.9 U	3.9 U	3.8 U	3.9 U	3.8 U	3.9 U	3.7 U	3.9 U
Aroclor 1242	4.0 U	3.9 U	3.9 U	3.8 U	3.9 U	3.8 U	3.9 U	3.7 U	3.9 U
Aroclor 1248	24 U	17	4.8 U	5.1	3.9 U	6.0	7.0	7.3	9.7 U
Aroclor 1254	47	23	3.9 U	4.0	3.9 U	6.2	7.1	3.7 U	24
Aroclor 1260	13	12	3.9 U	3.8 U	3.9 U	3.8 U	5.3	3.7 U	13
Total PCBs	60	52	4.8 U	9.1	3.9 U	12	19	7.3	37
Grain size (% DW)									
Phi Scale <-1	0.2	0.1	0.9	7.7	1.9	8.5	0.1 U	1.3	36.9
Phi Scale -1 to 0	1.2	1.6	4.4	11.5	3.2	12.5	1.7	6.0	7.0
Phi Scale 0 to 1	6.2	2.0	35.5	39.1	25.5	36.8	1.1	32.1	9.0
Phi Scale 1 to 2	13.9	2.6	45.3	28.7	58.4	28.6	2.8	43.8	8.5
Phi Scale 2 to 3	13.5	4.8	4.4	3.2	4.5	2.9	9.7	5.5	9.0
Phi Scale 3 to 4	19.4	15.2	3.1	2.4	2.0	1.4	17.1	4.2	9.6
Phi Scale 4 to 5	15.5	22.2	1.5	0.5	0.7	2.4	14.6	2.3	7.9
Phi Scale 5 to 6	10.7	19.6	1.4	2.2	1.0	3.2	22.6	1.3	4.5
Phi Scale 6 to 7	7.1	12.4	1.2	1.8	0.9	1.5	17.9	1.1	2.8
Phi Scale 7 to 8	4.5	7.6	0.7	1.0	0.6	0.6	6.2	0.8	1.7
Phi Scale 8 to 9	3.3	5.4	0.5	0.6	0.3	0.4	1.8	0.4	1.3
Phi Scale 9 to 10	2.2	2.9	0.2	0.3	0.1	0.2	0.9	0.3	0.7
Phi Scale >10	2.4	3.5	0.9	1.0	0.9	1.0	3.5	0.9	1.1
Total Clay (<0.004 mm - 0.004 mm)	7.9	11.8	1.6	1.9	1.3	1.6	6.2	1.6	3.1
Total Silt (0.06 mm - 0.004 mm)	37.8	61.8	4.8	5.5	3.2	7.7	61.3	5.5	16.9
Total Fines (Silt/Clay)	45.6	73.7	6.3	7.4	4.5	9.3	67.6	7.1	20.0
Total Sand (<2.0 mm - 0.06 mm)	54.2	26.2	92.7	84.9	93.6	82.2	32.4	91.6	43.1
Total Gravel (>2.0 mm)	0.2	0.1	0.9	7.7	1.9	8.5	0.1 U	1.3	36.9
Conventionals									
Total Organic Carbon (% DW)	2.07	2.17	1.25	1.16	0.844	2.20	4.01	1.86	0.928
Total Solids (% WW)	55.80	45.50	74.50	75.80	74.30	74.90	44.00	73.90	63.50

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS5005-A	LDW-SS6146-A	LDW-SS6146-D	LDW-SS6146-U	LDW-SSBDC2-A	LDW-SSBDC2-A-2	LDW-SSBDC2-D	LDW-SSBDC2-U	LDW-SSBDC3-D
Metals (mg/kg DW)									
Arsenic	50	10	10	20	13	13	10	11	11
Cadmium	0.6	0.5	0.5	0.6	0.4	0.4	0.4	0.4	0.4
Chromium	38.3	29	28	29	23.0	23.8	25	23.3	25.1
Copper	169	46.4	44.4	46.8	29.6	29.5	32.1	31.0	31.1
Lead	105	14	15	16	11	11	11	10	10
Mercury	0.13	0.36	0.16	0.11	0.07	0.07	0.07	0.09	0.07
Silver	0.4	0.7 U	0.6 U	0.6 U	0.5 U	0.5 U	0.6 U	0.6 U	0.5 U
Zinc	305	93	89	100	71	71	72	69	72
PAHs (µg/kg DW)									
Acenaphthene	28	19 U	19 U	7.8 J	19 U	19 U	19 U	19 U	15 J
Acenaphthylene	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
Anthracene	73	11 J	16 J	20	9.4 J	19 U	19 U	11 J	33
Benzo(a)anthracene	170	37	48	36	56	48	26	51	110
Benzofluoranthene	470	73	110	84	120	110	63	140	140
Benzo(g,h,i)perylene	110	23	36	29	42	42	24	44	39
Benzo(a)pyrene	180	30	46	32	51	48	24	50	63
Chrysene	260	56	76	57	89	69	40	75	150
Dibenzo(a,h)anthracene	39	11	10	12	14	11 J	5.8	12 J	16 J
Dibenzofuran	28	4.7 J	12 J	9.8 J	19 U	19 U	19 U	19 U	20 U
Fluoranthene	370	68	120	92	150	130	70	140	220
Fluorene	36	6.6 J	11 J	13 J	19 U	19 U	19 U	19 U	15 J
Indeno(1,2,3-cd)pyrene	98	20	30	22	39	36	19	38	37
1-Methylnaphthalene	9.7 J	5.6 J	19 U	6.9 J	19 U	19 U	19 U	19 U	20 U
2-Methylnaphthalene	23	7.5 J	12 J	9.8 J	19 U	19 U	19 U	19 U	20 U
Naphthalene	27	6.6 J	13 J	9.8 J	19 U	19 U	19 U	19 U	20 U
Phenanthrene	160	45	62	63	77	61	44	74	140
Pyrene	520	83	100	100	150	110	67	140	220
Total HPAHs	2200	400	580	460	710	600 J	340	690 J	1000 J
Total LPAHs	320	69 J	100 J	110 J	86 J	61	44	85 J	200 J
cPAHs	270	48	70	52	79	72 J	38	78 J	100 J
Phthalates (µg/kg DW)									
Butyl benzyl phthalate	19	8.4 J	14 J	12 J	4.3 J	6.0	4.5 J	3.8 J	2.8 J
Dibutyl phthalate	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
Di-n-octyl phthalate	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
Diethyl phthalate	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
Dimethyl phthalate	4.0 U	26	4.7 U	71	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
Bis(2-ethylhexyl)phthalate	280	150	190 U	91 U	73	78	70	89	75

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS5005-A	LDW-SS6146-A	LDW-SS6146-D	LDW-SS6146-U	LDW-SSBDC2-A	LDW-SSBDC2-A-2	LDW-SSBDC2-D	LDW-SSBDC2-U	LDW-SSBDC3-D
Phenols (µg/kg DW)									
2,4,5-Trichlorophenol	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
2,4,6-Trichlorophenol	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
2,4-Dichlorophenol	81 U	94 U	94 U	98 U	94 UJ	96 UJ	95 UJ	95 UJ	98 UJ
2,4-Dimethylphenol	4.0 U	4.7 UJ	3.1 J	4.9 UJ	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
2,4-Dinitrophenol	170 U	200 U	200 U	210 U	200 U	200 U	200 U	200 U	210 U
2-Chlorophenol	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
2-Nitrophenol	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
4,6-Dinitro-2-Methylphenol	160 U	190 U	190 U	200 U	190 U	190 U	190 U	190 U	200 U
4-Chloro-3-methylphenol	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
2-Methylphenol	4.0 U	4.7 U	3.6 J	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
4-Methylphenol	16	83	180	21	10 J	12 J	19 U	9.5 J	26
4-Nitrophenol	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
Pentachlorophenol	12 J	23 UJ	24 U	24 UJ	24 UJ	24 UJ	24 UJ	24 UJ	24 UJ
Phenol	56	35	130	24	16 J	17 J	15 J	23	26
Other SVOCs (µg/kg DW)									
Benzoic Acid	140 J	150 J	370	180 J	220	240	240	280	180 J
Benzyl Alcohol	110	160 J	240	170 J	140	150	200	230	120
4-Bromophenyl phenyl ether	16 U	19 U	19 U	20 U	19 UJ	19 UJ	19 UJ	19 UJ	20 UJ
Carbazole	29	5.6 J	19 U	8.8 J	14 J	13 J	19 U	13 J	16 J
Bis(2-chloro-1-methylethyl) ether	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
4-Chloroaniline	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 UJ
2-Chloronaphthalene	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
Bis(2-Chloroethoxy)Methane	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
Bis(2-Chloroethyl)Ether	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
4-Chlorophenyl-phenylether	16 U	19 U	19 U	20 U	19 UJ	19 UJ	19 UJ	19 UJ	20 UJ
1,2-Dichlorobenzene	4.0 U	4.7 U	4.7 U	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
1,3-Dichlorobenzene	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
1,4-Dichlorobenzene	4.0 U	4.7 U	4.7 U	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
3,3'-Dichlorobenzidine	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	R
2,4-Dinitrotoluene	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
2,6-Dinitrotoluene	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
Hexachlorobenzene	4.0 U	4.7 U	4.7 U	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
Hexachlorobutadiene	4.0 U	4.7 U	4.7 U	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
Hexachlorocyclopentadiene	81 U	94 UJ	94 U	98 UJ	94 UJ	96 UJ	95 UJ	95 UJ	R
Hexachloroethane	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
Isophorone	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
2-Nitroaniline	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SS5005-A	LDW-SS6146-A	LDW-SS6146-D	LDW-SS6146-U	LDW-SSBDC2-A	LDW-SSBDC2-A-2	LDW-SSBDC2-D	LDW-SSBDC2-U	LDW-SSBDC3-D
4-Nitroaniline	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
3-Nitroaniline	81 U	94 U	94 U	98 U	94 U	96 U	95 U	95 U	98 U
Nitrobenzene	16 U	19 U	19 U	20 U	19 U	19 U	19 U	19 U	20 U
N-Nitrosodiphenylamine	4.0 U	4.7 U	4.7 U	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
N-Nitrosodi-n-propylamine	4.0 U	4.7 U	4.7 U	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
1,2,4-Trichlorobenzene	4.0 U	4.7 U	4.7 U	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U	4.9 U
Aniline	100 U	120 UJ	120 U	130 UJ	120 U	120 U	120 U	120 U	R
N-Nitrosodimethylamine	20 U	23 U	24 U	24 U	24 U	24 U	24 U	24 U	24 U
PCB Aroclors (µg/kg DW)									
Aroclor 1016	3.9 U	4.0 U	4.0 U	3.9 U	4.0 U	4.0 U	3.9 U	3.9 U	3.9 U
Aroclor 1221	3.9 U	4.0 U	4.0 U	3.9 U	4.0 U	4.0 U	3.9 U	3.9 U	3.9 U
Aroclor 1232	3.9 U	4.0 U	4.0 U	3.9 U	4.0 U	4.0 U	3.9 U	3.9 U	7.8 U
Aroclor 1242	3.9 U	4.0 U	4.0 U	3.9 U	4.0 U	4.0 U	3.9 U	3.9 U	3.9 U
Aroclor 1248	31	15	4.9	19	11	8.0 U	3.9 U	7.8 U	3.9 U
Aroclor 1254	42	20	4.6	26	10	12	3.9 U	7.8	3.9 U
Aroclor 1260	21	19	4.7	17	5.3	7.5	3.9 U	5.2	3.9 U
Total PCBs	94	54	14	62	26	20	3.9 U	13	7.8 U
Grain size (% DW)									
Phi Scale <-1	46.6	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.3	0.3	0.1 U
Phi Scale -1 to 0	5.3	1.2	1.5	1.8	0.6	0.5	1.4	0.9	0.9
Phi Scale 0 to 1	7.1	1.1	1.5	1.9	1.2	1.3	2.6	1.8	0.8
Phi Scale 1 to 2	6.1	0.6	0.9	1.0	3.8	3.6	6.0	5.0	1.4
Phi Scale 2 to 3	2.1	1.9	2.0	2.2	11.2	11.3	10.5	13.9	7.7
Phi Scale 3 to 4	1.2	11.8	10.9	10.5	25.8	25.3	18.4	20.6	28.8
Phi Scale 4 to 5	0.6	18.4	15.1	15.8	24.8	25.9	24.9	23.5	28.2
Phi Scale 5 to 6	5.7	16.7	17.8	17.4	10.4	11.0	11.0	11.6	12.1
Phi Scale 6 to 7	7.3	16.0	16.0	17.3	8.2	7.8	9.2	8.1	7.4
Phi Scale 7 to 8	6.3	12.2	12.2	12.5	4.9	4.9	5.5	4.8	4.6
Phi Scale 8 to 9	4.1	6.8	7.1	6.7	3.4	2.9	4.2	3.8	3.4
Phi Scale 9 to 10	2.4	4.8	5.3	4.6	2.1	2.1	2.5	2.3	2.1
Phi Scale >10	5.1	8.5	9.7	8.3	3.5	3.4	3.5	3.3	2.8
Total Clay (<0.004 mm - 0.004 mm)	11.6	20.1	22.1	19.6	9.0	8.4	10.2	9.4	8.3
Total Silt (0.06 mm - 0.004 mm)	19.9	63.3	61.1	63.0	48.3	49.6	50.6	48.0	52.3
Total Fines (Silt/Clay)	31.6	83.4	83.1	82.6	57.3	57.9	60.8	57.5	60.5
Total Sand (<2.0 mm - 0.06 mm)	21.8	16.6	16.8	17.4	42.6	42.0	38.9	42.2	39.6
Total Gravel (>2.0 mm)	46.6	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.3	0.3	0.1 U
Conventionals									
Total Organic Carbon (% DW)	2.98	3.43	2.94	2.78	1.28	1.77	2.23	2.35	1.66
Total Solids (% WW)	66.40	46.60	47.00	46.10	54.30	54.30	51.20	51.60	54.90

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SSBDC3-U	LDW-SSBDC4-A	LDW-SSBRSTSD-A	LDW-SSBRSTSD-D	LDW-SSBRSTSD-U	LDW-SSPSF-A	LDW-SSPSF-D	LDW-SSPSF-U
Metals (mg/kg DW)								
Arsenic	13	11	20	20	20	20	20	20
Cadmium	0.4	0.4	0.6	0.6	0.6	0.4 U	0.4	0.5
Chromium	24.4	23.8	33	31	32	27	28	30
Copper	29.3	28.8	56.1	66.1	112	53.7	47.5	49.5
Lead	12	13	22	39	19	27	18	21
Mercury	0.06	0.06	0.14	0.16	0.10	0.12	0.11	0.10
Silver	0.6 U	0.5 U	0.6 U	0.6 U	0.7 U	0.7 U	0.6 U	0.6 U
Zinc	73	72	117	131	135	106	99	116
PAHs (µg/kg DW)								
Acenaphthene	13 J	100	32	160	50	130	19 J	62
Acenaphthylene	19 U	19 U	19 U	20 U	47	17 J	20 U	19
Anthracene	16 J	130	43	72	170	95	23	70
Benzo(a)anthracene	100	320	160	150	580	400	70	240
Benzofluoranthene	200	480	200	270	1600	580	140	370
Benzo(g,h,i)perylene	39	130	150	67	520	56	16 J	77
Benzo(a)pyrene	63	240	180	130	790	190	46	150
Chrysene	130	360	190	300	1700	550	79	430
Dibenzo(a,h)anthracene	14 J	47	60	23	200	26	7.4	29
Dibenzofuran	19 U	25	26	160	43	86	20 U	69
Fluoranthene	240	810	320	720	770	1600	200	780
Fluorene	19 U	66	30	270	67	100	17 J	65
Indeno(1,2,3-cd)pyrene	39	130	60	56	470	60	18 J	75
1-Methylnaphthalene	19 U	19 U	17 J	50	15 J	19 J	20 U	14 J
2-Methylnaphthalene	19 U	19 U	35	29	23	16 J	20 U	13 J
Naphthalene	19 U	19 U	29	28	28	25	20 U	20
Phenanthrene	65	550	160	760	360	480	73	540
Pyrene	230	800	260	440	450	1200	150	570
Total HPAHs	1100 J	3300	1600	2200	7100	4700	730 J	2700
Total LPAHs	94 J	850	290	1300	720	850 J	130 J	780
cPAHs	100 J	360	250	190	1200	310	73 J	230
Phthalates (µg/kg DW)								
Butyl benzyl phthalate	3.8 J	6.6	18 J	18 J	24	40	8.4	25 J
Dibutyl phthalate	19 U	19 U	19 U	11 J	33	20 U	20 U	19 U
Di-n-octyl phthalate	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
Diethyl phthalate	19 U	19 U	19 U	20 U	19 U	14 J	20 U	19 U
Dimethyl phthalate	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	24
Bis(2-ethylhexyl)phthalate	66	69	160 U	150 U	590	170	63	110

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SSBDC3-U	LDW-SSBDC4-A	LDW-SSBRSTSD-A	LDW-SSBRSTSD-D	LDW-SSBRSTSD-U	LDW-SSPSF-A	LDW-SSPSF-D	LDW-SSPSF-U
Phenols (µg/kg DW)								
2,4,5-Trichlorophenol	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
2,4,6-Trichlorophenol	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
2,4-Dichlorophenol	97 UJ	95 UJ	96 U	98 U	97 U	98 U	99 U	95 U
2,4-Dimethylphenol	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
2,4-Dinitrophenol	210 U	200 U	210 UJ	210 UJ	210 UJ	210 U	210 U	R
2-Chlorophenol	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
2-Nitrophenol	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
4,6-Dinitro-2-Methylphenol	190 U	190 U	190 U	200 U	190 U	200 U	200 U	190 U
4-Chloro-3-methylphenol	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
2-Methylphenol	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
4-Methylphenol	19 U	19 U	320	240	270	210	110	330
4-Nitrophenol	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
Pentachlorophenol	24 UJ	24 UJ	24 U	24 U	24 U	15 J	25 U	24 U
Phenol	11 J	12 J	150	99	120	200	86	60
Other SVOCs (µg/kg DW)								
Benzoic Acid	190 U	190 U	350	400	550	140 J	160 J	210
Benzyl Alcohol	30	28	320	630	410	150	170	150 J
4-Bromophenyl phenyl ether	19 UJ	19 UJ	19 U	20 U	19 U	20 U	20 U	19 U
Carbazole	14 J	41	18 J	180	160	32	20 U	47
Bis(2-chloro-1-methylethyl) ether	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
4-Chloroaniline	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
2-Chloronaphthalene	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
Bis(2-Chloroethoxy)Methane	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
Bis(2-Chloroethyl)Ether	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
4-Chlorophenyl-phenylether	19 UJ	19 UJ	19 U	20 U	19 U	20 U	20 U	19 U
1,2-Dichlorobenzene	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
1,3-Dichlorobenzene	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
1,4-Dichlorobenzene	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
3,3'-Dichlorobenzidine	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
2,4-Dinitrotoluene	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
2,6-Dinitrotoluene	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
Hexachlorobenzene	4.8 U	4.8 U	29	6.6	4.8 U	4.9 U	5.0 U	4.7 U
Hexachlorobutadiene	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
Hexachlorocyclopentadiene	97 UJ	95 UJ	96 U	98 U	97 U	98 U	99 U	95 U
Hexachloroethane	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
Isophorone	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
2-Nitroaniline	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U

Table A–1. LDW Outfall Surface Sediment Sample Results

Chemical	LDW-SSBDC3-U	LDW-SSBDC4-A	LDW-SSBRSTSD-A	LDW-SSBRSTSD-D	LDW-SSBRSTSD-U	LDW-SSPSF-A	LDW-SSPSF-D	LDW-SSPSF-U
4-Nitroaniline	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
3-Nitroaniline	97 U	95 U	96 U	98 U	97 U	98 U	99 U	95 U
Nitrobenzene	19 U	19 U	19 U	20 U	19 U	20 U	20 U	19 U
N-Nitrosodiphenylamine	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
N-Nitrosodi-n-propylamine	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
1,2,4-Trichlorobenzene	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U	5.0 U	4.7 U
Aniline	130 U	120 U	120 U	130 U	130 U	130 U	130 U	120 U
N-Nitrosodimethylamine	24 U	24 U	24 U	24 U	24 U	25 U	25 U	24 U
PCB Aroclors (µg/kg DW)								
Aroclor 1016	3.9 U	4.0 U	3.9 U	3.9 U	4.0 U	3.9 U	4.0 U	3.9 U
Aroclor 1221	3.9 U	4.0 U	3.9 U	3.9 U	4.0 U	3.9 U	4.0 U	3.9 U
Aroclor 1232	3.9 U	4.0 U	3.9 U	3.9 U	4.0 U	3.9 U	4.0 U	3.9 U
Aroclor 1242	3.9 U	4.0 U	3.9 U	3.9 U	4.0 U	3.9 U	4.0 U	3.9 U
Aroclor 1248	25	5.9 U	32	28	26	22	12	35
Aroclor 1254	27	9.7	42	35	40	34	18	88
Aroclor 1260	14	6.8	41	21	38	28	16	35
Total PCBs	66	17	120	84	100	84	46	160
Grain size (% DW)								
Phi Scale <-1	0.3	0.4	0.1	2.5	2.2	17.7	3.5	0.4
Phi Scale -1 to 0	0.9	1.2	2.9	2.0	3.5	4.0	2.4	1.2
Phi Scale 0 to 1	1.9	2.2	3.4	2.1	3.0	2.3	1.6	1.3
Phi Scale 1 to 2	5.0	7.1	4.9	3.6	4.5	3.2	2.3	2.8
Phi Scale 2 to 3	12.4	13.0	4.1	5.3	4.2	3.9	4.7	6.0
Phi Scale 3 to 4	25.6	22.1	9.4	10.9	7.6	7.4	17.2	19.9
Phi Scale 4 to 5	22.2	20.4	11.7	10.8	11.9	7.7	16.4	16.2
Phi Scale 5 to 6	9.8	10.0	16.6	15.8	16.8	13.3	12.0	12.1
Phi Scale 6 to 7	7.3	7.3	17.0	16.6	15.9	15.2	13.8	13.6
Phi Scale 7 to 8	5.4	5.6	12.1	11.9	12.3	8.7	10.0	10.4
Phi Scale 8 to 9	3.8	4.1	6.6	6.6	7.2	5.7	6.7	6.0
Phi Scale 9 to 10	2.2	2.6	3.5	3.8	3.5	4.0	2.9	3.6
Phi Scale >10	3.3	4.1	7.8	8.0	7.4	6.8	6.4	6.6
Total Clay (<0.004 mm - 0.004 mm)	9.3	10.8	17.9	18.4	18.1	16.5	16.0	16.2
Total Silt (0.06 mm - 0.004 mm)	44.7	43.3	57.4	55.1	56.9	44.9	52.2	52.3
Total Fines (Silt/Clay)	54.0	54.1	75.2	73.5	74.9	61.4	68.3	68.5
Total Sand (<2.0 mm - 0.06 mm)	45.8	45.6	24.7	23.9	22.8	20.8	28.2	31.2
Total Gravel (>2.0 mm)	0.3	0.4	0.1	2.5	2.2	17.7	3.5	0.4
Conventionals								
Total Organic Carbon (% DW)	1.63	1.60	2.50	2.07	2.35	1.90	3.01	1.88
Total Solids (% WW)	53.40	53.70	45.40	46.30	42.20	49.60	50.80	49.50

Table A–2. LDW Outfall Surface Sediment Sample Results for Dioxins/Furans (ng TEQ/kg dw)

Chemical	LDW-SS2008-A	LDW-SS2013-A	LDW-SS2021-A	LDW-SS2022-A	LDW-SS2022-A-2	LDW-SS2022-D	LDW-SS2035-A	LDW-SS2036-A	LDW-SS2040-A	LDW-SS2082-U
2,3,7,8-TCDD	0.428 J	0.292 J	0.081 U	0.357 J	0.306 U	0.401 U	0.306 U	0.382 U	0.058 U	0.44 J
1,2,3,7,8-PECDD	1.07 J	1.87 J	0.226 U	0.866 J	0.926 J	1.01 J	0.784 J	0.836 J	0.068 J	1.1 J
1,2,3,4,7,8-HXCDD	1.77 J	4.04 J	0.323 J	1.53 J	1.71 J	1.62 J	1.38 J	1.32 J	0.143 U	2.03 J
1,2,3,6,7,8-HXCDD	7.77	11.3	1.1 J	5.51	5.13 J	5.99 J	4.82 J	5.62 J	0.779 J	6.36
1,2,3,7,8,9-HXCDD	5.43	10.4 J	1.01 J	4.52 J	4.2 J	4.94 J	3.99 J	4.21 J	0.357 J	6.45
1,2,3,4,6,7,8-HPCDD	190	223	30.6	195	122	145	122	137	17.7	198
OCDD	1850	1630	273	1630	1210	1270	1140	1240	125	2160
2,3,7,8-TCDF	0.768 J	0.728 J	0.16 J	0.62 J	0.61 J	0.676 J	0.488 J	0.546 J	0.057 U	0.524 J
1,2,3,7,8-PECDF	0.629 J	0.543 U	0.087 U	0.465 U	0.426 U	0.486 J	0.379 J	0.436 U	0.0502 U	0.459 J
2,3,4,7,8-PECDF	1.25 J	1.41 J	0.181 J	1.13 J	1.02 U	1.19 J	0.808 J	0.85 J	0.097 U	0.879 J
1,2,3,4,7,8-HXCDF	5.61	3.72 J	0.379 J	3.68 J	3.09 J	3.22 J	2.67 J	2.85 J	0.276 J	2.86 J
1,2,3,6,7,8-HXCDF	1.62 J	1.57 J	0.173 J	1.09 J	1.19 J	1.25 J	0.956 J	1.12 J	0.107 U	1.12 J
1,2,3,7,8,9-HXCDF	0.142 J	0.085 U	0.0473 U	0.077 U	0.085 U	0.103 J	0.082 J	0.107 U	0.0502 U	0.106 U
2,3,4,6,7,8-HXCDF	1.18 J	1.21 J	0.163 J	0.926 J	0.979 J	0.962 J	0.778 J	0.878 J	0.097 J	0.927 J
1,2,3,4,6,7,8-HPCDF	35.5	35.1	3.05 J	25.4	23.9	27.3	20	25.2	5.7	23.8
1,2,3,4,7,8,9-HPCDF	3.2 J	2.17 J	0.257 J	2.15 U	1.9 J	1.97 J	1.65 J	2 J	0.404 J	1.94 J
OCDF	121	90.9	8.34 J	76.1	67.3	78.7	65.8	94.7	22.3	84.2
Dioxin/Furan TEQ	7.20 J	9.01 J	0.966 J	6.09 J	4.79 J	5.61 J	4.51 J	4.99 J	0.563 J	6.76 J
Total TCDD	5.33	3.17	1.17	3.65	3.63	3.69	4.15	4.30	0.0540	5.17
Total TCDF	22.4	22.1	4.37	21.7	20.5	24.2	12.5	13.9	0.697	15.3
Total PeCDD	9.72	8.98	1.08	6.78	5.72	7.60	7.32	7.94	0.355	9.22
Total PeCDF	24.9	25.5	2.90	17.2	16.1	20.7	13.8	15.5	0.986	17.3
Total HxCDD	66.7	77.7	14.8	45.4	43.4	52.0	45.0	53.0	3.76	93.5
Total HxCDF	60.8	48.0	5.83	36.6	35.5	39.1	32.1	37.0	4.85	38.9
Total HpCDD	513	467	159	480	335	392	356	435	34.7	905
Total HpCDF	128	101	9.94	86.0	78.1	90.6	67.9	93.4	20.6	81.9

Table A–2. LDW Outfall Surface Sediment Sample Results for Dioxins/Furans (ng TEQ/kg dw)

Chemical	LDW-SS2090-A	LDW-SS2091-U	LDW-SS2098-A	LDW-SS2099-A	LDW-SS2103-A	LDW-SS2106-A	LDW-SS2115-A	LDW-SS2122-A	LDW-SS2122-D	LDW-SS2139-A
2,3,7,8-TCDD	0.313 J	0.186 U	0.086 U	0.11 U	0.178 U	0.34 U	0.143 U	0.355 J	0.405 J	0.235 U
1,2,3,7,8-PECDD	0.636 J	0.419 J	0.085 U	0.138 J	0.302 J	0.659 J	0.87 J	0.814 J	1.06 J	1.01 U
1,2,3,4,7,8-HXCDD	1.09 J	0.68 J	0.118 U	0.178 J	0.377 J	1.12 J	1.81 J	1.41 J	1.91 J	1.94 J
1,2,3,6,7,8-HXCDD	3.46 J	2.06 J	0.396 J	0.87 J	0.947 J	3.49 J	13.3 J	5.23 J	9.16	6.85
1,2,3,7,8,9-HXCDD	3.34 J	1.79 J	0.329 U	0.616 J	0.9 J	3.01 J	4.48 J	3.99 J	6.26	6.16 J
1,2,3,4,6,7,8-HPCDD	63.5	43	7.68	16.2	17.9	72	179	122	279	192
OCDD	543	373	59.6	132	151	626	1310	1160	2410	1890
2,3,7,8-TCDF	0.45 J	0.236 J	0.0489 U	0.089 U	0.144 J	0.372 U	0.244 J	0.459 J	0.658 J	0.796 J
1,2,3,7,8-PECDF	0.26 J	0.153 J	0.0461 U	0.083 U	0.11 J	0.315 J	0.309 J	0.448 J	0.551 J	0.552 J
2,3,4,7,8-PECDF	0.489 J	0.344 J	0.066 U	0.193 J	0.243 J	0.526 J	0.437 J	0.758 J	1.07 J	1.3 J
1,2,3,4,7,8-HXCDF	1.28 J	0.924 J	0.136 J	0.829 J	0.505 J	1.84 J	1.57 J	2.79 J	3.99 J	5.75
1,2,3,6,7,8-HXCDF	0.715 J	0.475 J	0.065 U	0.229 J	0.216 J	0.669 J	1.26 J	0.965 J	1.44 J	1.51 J
1,2,3,7,8,9-HXCDF	0.056 U	0.0473 U	0.0461 U	0.0521 U	0.0485 U	0.085 U	0.1 J	0.139 J	0.104 J	0.132 U
2,3,4,6,7,8-HXCDF	0.643 J	0.387 J	0.08 U	0.159 J	0.207 J	0.619 J	1.24 J	0.891 J	1.18 J	1.16 J
1,2,3,4,6,7,8-HPCDF	12.3	9.43	1.32 J	4.28 J	3.67 J	16.1	19.5	21.6	29.6	38.2
1,2,3,4,7,8,9-HPCDF	0.9 J	0.707 J	0.126 J	0.44 J	0.297 J	1.21 J	1.14 J	1.78 J	2.35 J	3.8 J
OCDF	32.1	30.2	2.69 J	11.6	9.91 J	45.4	29.5	67.3	97.9	125
Dioxin/Furan TEQ	3.14 J	1.93 J	0.294 J	0.800 J	1.07 J	3.19 J	5.88 J	4.82 J	8.13 J	6.40 J
Total TCDD	3.2	1.75	0.345	0.900	1.07	3.36	1.12	3.92	5.13	3.99
Total TCDF	9.02	6.17	0.935	2.32	3.40	9.32	4.44	12.1	17.1 J	14.2
Total PeCDD	4.96	2.51	0.282	1.53	2.18	5.99	2.43	6.68	9.64	6.04
Total PeCDF	9.11	6.78	0.908	2.78	3.31	9.98	8.01	13.7	19.5	19.6
Total HxCDD	28.8	17.1	2.51	7.06	8.50	30.4	45.8	46.6	81.0	74.1
Total HxCDF	18.6	14.0	1.87	8.16	6.32	24.6	34.8	33.3	48.0	55.0
Total HpCDD	148	107	16.7	36.2	44.1	190	321	368	741	681
Total HpCDF	36.5	30.2	3.45	14.8	11.3	52.4	54.6	73.2	101	146

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SS2078-A	LDW-SS2078-D	LDW-SS2078-U	LDW-SS2082-U	LDW-SS2083-A	LDW-SS2085-A	LDW-SS2089-A	LDW-SS2089-D	LDW-SS2090-A
Metals												
Arsenic	57	93	mg/kg dw	10	10	20	20	20	10	20	10	10
Cadmium	5.1	6.7	mg/kg dw	0.5	0.5 U	0.5 U	0.6	0.6	0.4	0.5	0.5	0.5
Chromium	260	270	mg/kg dw	32	31	32	34	32	28	30	29	30
Copper	390	390	mg/kg dw	61.7	59.9	60.5	58.4	56.7	37.2	46.6	44.1	42.3
Lead	450	530	mg/kg dw	20	18	21	20	19	11	15	14	15
Mercury	0.41	0.59	mg/kg dw	0.15	0.10	0.14	0.13	0.17	0.11	0.15	0.13	0.17
Silver	6.1	6.1	mg/kg dw	0.7 U	0.7 U	0.8 U	0.8 U	0.8 U	0.6 U	0.7 U	0.7 U	0.7 U
Zinc	410	960	mg/kg dw	119	100	120	115	111	81	96	88	95
PAHs												
Acenaphthene	16	57	mg/kg OC	0.19 J	0.26 J	0.30 J	0.50 U	0.56 J	0.81 U	0.57 U	0.57 U	0.57 U
Acenaphthylene	66	66	mg/kg OC	0.61 U	0.58 U	0.85 U	0.50 U	0.71 U	0.81 U	0.57 U	0.57 U	0.57 U
Anthracene	220	1200	mg/kg OC	0.51 J	0.61	0.54 J	0.65	2.0	0.81 U	0.74	0.57	0.57 U
Benzo(a)anthracene	110	270	mg/kg OC	3.5	4.3	3.8	3.5	12	1.0	5.4	3.9	1.1
Benzofluoranthene	230	450	mg/kg OC	9.9	11	12	9.3	32	2.8	17	13	2.6
Benzo(g,h,i)perylene	31	78	mg/kg OC	3.5	3.7	3.7	3.0	11	1.2	5.4	4.5	1.0
Benzo(a)pyrene	99	210	mg/kg OC	3.8	4.6	4.5	3.5	12	1.1	5.9	4.5	1.1
Chrysene	110	460	mg/kg OC	6.1	6.7	6.3	5.5	20	1.8	8.8	6.6	1.6
Dibenzo(a,h)anthracene	12	33	mg/kg OC	1.3	1.3	1.5	0.93	3.2	0.26	1.4	1.1	0.23
Dibenzofuran	15	58	mg/kg OC	0.22 J	0.26 J	0.30 J	0.35 J	0.75	0.81 U	0.34 J	0.33 J	0.57 U
Fluoranthene	160	1200	mg/kg OC	9.6	12	12	9.8	37	3.0	16	13	2.9
Fluorene	23	79	mg/kg OC	0.28 J	0.34 J	0.39 J	0.35 J	0.86	0.81 U	0.31 J	0.33 J	0.57 U
Indeno(1,2,3-cd)pyrene	34	88	mg/kg OC	3.1	3.4	3.5	2.5	9.8	0.94	5.1	4.2	0.87
2-Methylnaphthalene	38	64	mg/kg OC	0.61 U	0.14 J	0.85 U	0.50 U	0.71 U	0.81 U	0.57 U	0.57 U	0.57 U
Naphthalene	99	170	mg/kg OC	0.19 J	0.20 J	0.85 U	0.35 J	0.60 J	0.43 J	0.40 J	0.39 J	0.57 U
Phenanthrene	100	480	mg/kg OC	4.5	6.1	5.4	4.0	15	1.9	7.4	5.7	1.2
Pyrene	1000	1400	mg/kg OC	10	14	13	8.8	33	2.7	15	12	2.8
Total HPAHs	960	5300	mg/kg OC	51	61	58	48	170	15	82	63	14
Total LPAHs	370	780	mg/kg OC	5.8 J	7.6 J	6.7 J	5.3 J	20 J	2.3 J	8.8 J	6.9 J	1.2
Phthalates												
Butyl benzyl phthalate	4.9	64	mg/kg OC	0.64 J	0.58 J	0.67 J	0.53	0.68	0.26	0.42 J	0.33 J	0.25
Dibutyl phthalate	220	1700	mg/kg OC	0.25 J	0.58 U	0.43 J	0.50 U	0.71 U	0.81 U	0.57 U	0.57 U	0.36 J
Di-n-octyl phthalate	58	4500	mg/kg OC	0.61 U	0.37 J	0.85 U	0.50 U	0.71 U	0.81 U	0.31 J	0.57 U	0.57 U
Diethyl phthalate	61	110	mg/kg OC	0.61 U	0.58 U	0.85 U	0.50 U	0.71 U	0.81 U	0.34 J	0.57 U	0.57 U
Dimethyl phthalate	53	53	mg/kg OC	1.1	3.7	1.4	0.11 J	0.17 J	0.20 U	0.14 U	0.076 J	0.087 J
Bis(2-ethylhexyl)phthalate	47	78	mg/kg OC	3.5	4.0	5.8	4.5	6.4	3.6	4.0	4.8	3.9

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SS2078-A	LDW-SS2078-D	LDW-SS2078-U	LDW-SS2082-U	LDW-SS2083-A	LDW-SS2085-A	LDW-SS2089-A	LDW-SS2089-D	LDW-SS2090-A
Phenols												
2,4-Dimethylphenol	29	29	µg/kg dw	4.8 UJ	4.7 UJ	4.8 UJ	2.8 J	2.4 J	2.7 J	4.9 U	4.9 U	4.8 U
2-Methylphenol	63	63	µg/kg dw	4.8 U	4.7 U	4.8 U	4.0 J	4.7 J	3.2 J	3.7 J	2.9 J	4.8 U
4-Methylphenol	670	670	µg/kg dw	14 J	9.5 J	10 J	20	21	16 J	20	18 J	9.6 J
Pentachlorophenol	360	690	ug/kg dw	24 UJ	24 UJ	24 UJ	25 UJ	24 UJ	24 UJ	25 UJ	24 UJ	24 UJ
Phenol	420	1200	ug/kg dw	16 J	16 J	14 J	34	30	32	31	24	14 J
Other SVOCs												
Benzoic Acid	650	650	µg/kg dw	140 J	140 J	100 J	370	380	420	550	400	210
Benzyl Alcohol	57	73	µg/kg dw	**120 J**	**120 J**	**93 J**	**280**	**290**	**360**	**360**	**300**	**130**
1,2-Dichlorobenzene	2.3	2.3	mg/kg OC	0.15 U	0.14 U	0.22 U	0.13 U	0.18 U	0.20 U	0.14 U	0.15 U	0.14 U
1,4-Dichlorobenzene	3.1	9	mg/kg OC	0.15 U	0.14 U	0.22 U	0.13 U	0.18 U	0.20 U	0.14 U	0.15 U	0.14 U
Hexachlorobenzene	0.38	2.3	mg/kg OC	0.15 U	0.14 U	0.22 U	0.13 U	0.18 U	0.20 U	0.14 U	0.15 U	0.14 U
Hexachlorobutadiene	3.9	6.2	mg/kg OC	0.15 U	0.14 U	0.22 U	0.13 U	0.18 U	0.20 U	0.14 U	0.15 U	0.14 U
N-Nitrosodiphenylamine	11	11	mg/kg OC	0.15 U	0.14 U	0.22 U	0.13 U	0.18 U	0.20 U	0.14 U	0.15 U	0.14 U
1,2,4-Trichlorobenzene	0.81	1.8	mg/kg OC	0.15 U	0.14 U	0.22 U	0.13 U	0.18 U	0.20 U	0.14 U	0.15 U	0.14 U
PCB Aroclors												
Total PCBs	12	65	mg/kg OC	2.6	1.3	3.8	0.58	0.64	0.24	0.74	0.12 U	0.42

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SS2090-D	LDW-SS2091-U	LDW-SS2092-A	LDW-SS2093-D	LDW-SS2094-D	LDW-SS2096-A	LDW-SS2096-U	LDW-SS2097-A	LDW-SS2097-D
Metals												
Arsenic	57	93	mg/kg dw	20	9	10	7	10	9	10	10	10
Cadmium	5.1	6.7	mg/kg dw	0.5	0.4	0.4 U	0.3 U	0.4 U	0.3 U	0.3 U	0.4 U	0.4
Chromium	260	270	mg/kg dw	31	21.4	27	15.1	25	20.2	18.9	24.8	28
Copper	390	390	mg/kg dw	42.9	29.4	34.0	16.2	34.2	22.8	21.2	30.1	39.0
Lead	450	530	mg/kg dw	17	10	11	6	13	12	11	12	20
Mercury	0.41	0.59	mg/kg dw	0.11	0.06	0.07	0.03 U	0.10	0.06	0.04	0.06	0.11
Silver	6.1	6.1	mg/kg dw	0.7 U	0.5 U	0.6 U	0.4 U	0.6 U	0.4 U	0.4 U	0.5 U	0.6 U
Zinc	410	960	mg/kg dw	98	66	79	53	80	63	69	69	90
PAHs												
Acenaphthene	16	57	mg/kg OC	1.9	0.73 J	0.95 U	1.5 U	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Acenaphthylene	66	66	mg/kg OC	0.59 U	0.98 U	0.95 U	1.5 U	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Anthracene	220	1200	mg/kg OC	3.7	0.98 U	0.95 U	1.5 U	0.81 U	0.69 J	0.47 J	0.92 U	0.65 J
Benzo(a)anthracene	110	270	mg/kg OC	7.4	0.88 J	1.9	1.5 U	1.2	4.6	4.3	1.4	3.1
Benzofluoranthene	230	450	mg/kg OC	11	2.7	4.7	1.5	3.1	11	11	2.9	6.0
Benzo(g,h,i)perylene	31	78	mg/kg OC	3.4	0.98	1.8	1.5 U	1.3	4.2	4.0	1.2	2.4
Benzo(a)pyrene	99	210	mg/kg OC	6.2	0.98	2.1	1.5 U	1.3	4.6	4.3	1.2	2.8
Chrysene	110	460	mg/kg OC	8.3	1.6	2.8	1.1 J	2.1	6.9	6.1	1.9	3.9
Dibenzo(a,h)anthracene	12	33	mg/kg OC	1.1	0.22 J	0.48 J	0.38 U	0.37	1.3	1.2	0.28	0.74 J
Dibenzofuran	15	58	mg/kg OC	0.83	0.98 U	0.95 U	1.5 U	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Fluoranthene	160	1200	mg/kg OC	17	2.6	5.5	1.8	3.4	14	12	3.9	7.8
Fluorene	23	79	mg/kg OC	1.8	0.98 U	0.95 U	1.5 U	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Indeno(1,2,3-cd)pyrene	34	88	mg/kg OC	3.4	0.83 J	1.6	1.5 U	1.0	3.8	3.6	1.0	2.2
2-Methylnaphthalene	38	64	mg/kg OC	0.34 J	0.98 U	0.95 U	0.77 J	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Naphthalene	99	170	mg/kg OC	0.52 J	0.98 U	0.95 U	1.5 U	0.81 U	0.73 U	0.68 U	0.46 J	0.92 U
Phenanthrene	100	480	mg/kg OC	16	1.3	2.5	1.3 J	1.8	6.1	4.3	2.3	4.0
Pyrene	1000	1400	mg/kg OC	19	2.2	5.0	1.7	3.2	11	10	3.4	6.9
Total HPAHs	960	5300	mg/kg OC	77	13 J	26 J	6.1 J	17	61	58	17	36 J
Total LPAHs	370	780	mg/kg OC	24 J	2.1 J	2.5	1.3 J	1.8	6.9 J	4.7 J	2.8 J	4.6 J
Phthalates												
Butyl benzyl phthalate	4.9	64	mg/kg OC	0.37	0.42	0.27 J	0.38 U	0.37 J	0.12 J	0.14 J	0.30 J	0.51 J
Dibutyl phthalate	220	1700	mg/kg OC	0.59 U	0.98 U	0.95 U	1.5 U	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Di-n-octyl phthalate	58	4500	mg/kg OC	0.59 U	0.98 U	0.95 U	1.5 U	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Diethyl phthalate	61	110	mg/kg OC	1.4	0.98 U	2.6 U	1.5 U	0.81 U	0.73 U	0.68 U	0.92 U	0.92 U
Dimethyl phthalate	53	53	mg/kg OC	0.15 U	0.25 U	0.24 U	0.38 U	0.12 J	0.18 U	0.17 U	0.23 U	0.23 U
Bis(2-ethylhexyl)phthalate	47	78	mg/kg OC	4.0	3.5	3.3 U	3.2 U	5.7	1.9 U	0.79 U	3.5 U	5.5

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SS2090-D	LDW-SS2091-U	LDW-SS2092-A	LDW-SS2093-D	LDW-SS2094-D	LDW-SS2096-A	LDW-SS2096-U	LDW-SS2097-A	LDW-SS2097-D
Phenols												
2,4-Dimethylphenol	29	29	µg/kg dw	4.7 U	4.8 U	4.8 U	4.6 U	2.7 J	4.7 U	4.8 U	4.8 U	4.9 U
2-Methylphenol	63	63	µg/kg dw	4.7 U	4.8 U	4.8 U	4.6 U	5.0 U	4.7 U	4.8 U	4.8 U	4.9 U
4-Methylphenol	670	670	µg/kg dw	11 J	19 U	14 J	18 U	25	19 U	19 U	12 J	22
Pentachlorophenol	360	690	ug/kg dw	23 UJ	24 UJ	24 UJ	23 UJ	25 UJ	24 UJ	24 UJ	24 UJ	24 UJ
Phenol	420	1200	ug/kg dw	17 J	19 U	26	18 U	26	12 J	19 U	9.6 J	23
Other SVOCs												
Benzoic Acid	650	650	µg/kg dw	250	190 U	280	180 U	310	140 J	68 J	120 J	300
Benzyl Alcohol	57	73	µg/kg dw	**150**	31	**250**	6.5	**220**	**68**	17	**76**	**220**
1,2-Dichlorobenzene	2.3	2.3	mg/kg OC	0.15 U	0.25 U	0.24 U	0.38 U	0.20 U	0.18 U	0.17 U	0.23 U	0.23 U
1,4-Dichlorobenzene	3.1	9	mg/kg OC	0.15 U	0.25 U	0.24 U	0.38 U	0.20 U	0.18 U	0.17 U	0.23 U	0.23 U
Hexachlorobenzene	0.38	2.3	mg/kg OC	0.15 U	0.25 U	0.24 U	0.38 U	0.20 U	0.18 U	0.17 U	0.23 U	0.23 U
Hexachlorobutadiene	3.9	6.2	mg/kg OC	0.15 U	0.25 U	0.24 U	0.38 U	0.20 U	0.18 U	0.17 U	0.23 U	0.23 U
N-Nitrosodiphenylamine	11	11	mg/kg OC	0.15 U	0.25 U	0.24 U	0.38 U	0.20 U	0.18 U	0.17 U	0.23 U	0.23 U
1,2,4-Trichlorobenzene	0.81	1.8	mg/kg OC	0.15 U	0.25 U	0.24 U	0.38 U	0.20 U	0.18 U	0.17 U	0.23 U	0.23 U
PCB Aroclors												
Total PCBs	12	65	mg/kg OC	1.9 JN	1.2	3.4	2.9 J	1.7	3.8	1.2	2.9	2.4

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SS5005-A	LDW-SS6146-A	LDW-SS6146-D	LDW-SS6146-U	LDW-SSBDC2-A	LDW-SSBDC2-A-2	LDW-SSBDC2-D	LDW-SSBDC2-U
Metals											
Arsenic	57	93	mg/kg dw	50	10	10	20	13	13	10	11
Cadmium	5.1	6.7	mg/kg dw	0.6	0.5	0.5	0.6	0.4	0.4	0.4	0.4
Chromium	260	270	mg/kg dw	38.3	29	28	29	23.0	23.8	25	23.3
Copper	390	390	mg/kg dw	169	46.4	44.4	46.8	29.6	29.5	32.1	31.0
Lead	450	530	mg/kg dw	105	14	15	16	11	11	11	10
Mercury	0.41	0.59	mg/kg dw	0.13	0.36	0.16	0.11	0.07	0.07	0.07	0.09
Silver	6.1	6.1	mg/kg dw	0.4	0.7 U	0.6 U	0.6 U	0.5 U	0.5 U	0.6 U	0.6 U
Zinc	410	960	mg/kg dw	305	93	89	100	71	71	72	69
PAHs											
Acenaphthene	16	57	mg/kg OC	0.94	0.55 U	0.65 U	0.28 J	1.5 U	1.1 U	0.85 U	0.81 U
Acenaphthylene	66	66	mg/kg OC	0.54 U	0.55 U	0.65 U	0.72 U	1.5 U	1.1 U	0.85 U	0.81 U
Anthracene	220	1200	mg/kg OC	2.4	0.32 J	0.54 J	0.72	0.73 J	1.1 U	0.85 U	0.47 J
Benzo(a)anthracene	110	270	mg/kg OC	5.7	1.1	1.6	1.3	4.4	2.7	1.2	2.2
Benzofluoranthene	230	450	mg/kg OC	16	2.1	3.7	3.0	9.4	6.2	2.8	6.0
Benzo(g,h,i)perylene	31	78	mg/kg OC	3.7	0.67	1.2	1.0	3.3	2.4	1.1	1.9
Benzo(a)pyrene	99	210	mg/kg OC	6.0	0.87	1.6	1.2	4.0	2.7	1.1	2.1
Chrysene	110	460	mg/kg OC	8.7	1.6	2.6	2.1	7.0	3.9	1.8	3.2
Dibenzo(a,h)anthracene	12	33	mg/kg OC	1.3	0.32	0.34	0.43	1.1	0.62 J	0.26	0.51 J
Dibenzofuran	15	58	mg/kg OC	0.94	0.14 J	0.41 J	0.35 J	1.5 U	1.1 U	0.85 U	0.81 U
Fluoranthene	160	1200	mg/kg OC	12	2.0	4.1	3.3	12	7.3	3.1	6.0
Fluorene	23	79	mg/kg OC	1.2	0.19 J	0.37 J	0.47 J	1.5 U	1.1 U	0.85 U	0.81 U
Indeno(1,2,3-cd)pyrene	34	88	mg/kg OC	3.3	0.58	1.0	0.79	3.0	2.0	0.85	1.6
2-Methylnaphthalene	38	64	mg/kg OC	0.77	0.22 J	0.41 J	0.35 J	1.5 U	1.1 U	0.85 U	0.81 U
Naphthalene	99	170	mg/kg OC	0.91	0.19 J	0.44 J	0.35 J	1.5 U	1.1 U	0.85 U	0.81 U
Phenanthrene	100	480	mg/kg OC	5.4	1.3	2.1	2.3	6.0	3.4	2.0	3.1
Pyrene	1000	1400	mg/kg OC	17	2.4	3.4	3.6	12	6.2	3.0	6.0
Total HPAHs	960	5300	mg/kg OC	74	12	20	17	55	34 J	15	29 J
Total LPAHs	370	780	mg/kg OC	11	2.0 J	3.4 J	4.0 J	6.7 J	3.4	2.0	3.6 J
Phthalates											
Butyl benzyl phthalate	4.9	64	mg/kg OC	0.64	0.24 J	0.48 J	0.43 J	0.34 J	0.34	0.20 J	0.16 J
Dibutyl phthalate	220	1700	mg/kg OC	0.54 U	0.55 U	0.65 U	0.72 U	1.5 U	1.1 U	0.85 U	0.81 U
Di-n-octyl phthalate	58	4500	mg/kg OC	0.54 U	0.55 U	0.65 U	0.72 U	1.5 U	1.1 U	0.85 U	0.81 U
Diethyl phthalate	61	110	mg/kg OC	0.54 U	0.55 U	0.65 U	0.72 U	1.5 U	1.1 U	0.85 U	0.81 U
Dimethyl phthalate	53	53	mg/kg OC	0.13 U	0.76	0.16 U	2.6	0.37 U	0.27 U	0.22 U	0.20 U
Bis(2-ethylhexyl)phthalate	47	78	mg/kg OC	9.4	4.4	6.5 U	3.3 U	5.7	4.4	3.1	3.8

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SS5005-A	LDW-SS6146-A	LDW-SS6146-D	LDW-SS6146-U	LDW-SSBDC2-A	LDW-SSBDC2-A-2	LDW-SSBDC2-D	LDW-SSBDC2-U
Phenols											
2,4-Dimethylphenol	29	29	µg/kg dw	4.0 U	4.7 UJ	3.1 J	4.9 UJ	4.7 U	4.8 U	4.8 U	4.8 U
2-Methylphenol	63	63	µg/kg dw	4.0 U	4.7 U	3.6 J	4.9 U	4.7 U	4.8 U	4.8 U	4.8 U
4-Methylphenol	670	670	µg/kg dw	16	83	180	21	10 J	12 J	19 U	9.5 J
Pentachlorophenol	360	690	ug/kg dw	12 J	23 UJ	24 U	24 UJ	24 UJ	24 UJ	24 UJ	24 UJ
Phenol	420	1200	ug/kg dw	56	35	130	24	16 J	17 J	15 J	23
Other SVOCs											
Benzoic Acid	650	650	µg/kg dw	140 J	150 J	370	180 J	220	240	240	280
Benzyl Alcohol	57	73	µg/kg dw	**110**	**160 J**	**240**	**170 J**	**140**	**150**	**200**	**230**
1,2-Dichlorobenzene	2.3	2.3	mg/kg OC	0.13 U	0.14 U	0.16 U	0.18 U	0.37 U	0.27 U	0.22 U	0.20 U
1,4-Dichlorobenzene	3.1	9	mg/kg OC	0.13 U	0.14 U	0.16 U	0.18 U	0.37 U	0.27 U	0.22 U	0.20 U
Hexachlorobenzene	0.38	2.3	mg/kg OC	0.13 U	0.14 U	0.16 U	0.18 U	0.37 U	0.27 U	0.22 U	0.20 U
Hexachlorobutadiene	3.9	6.2	mg/kg OC	0.13 U	0.14 U	0.16 U	0.18 U	0.37 U	0.27 U	0.22 U	0.20 U
N-Nitrosodiphenylamine	11	11	mg/kg OC	0.13 U	0.14 U	0.16 U	0.18 U	0.37 U	0.27 U	0.22 U	0.20 U
1,2,4-Trichlorobenzene	0.81	1.8	mg/kg OC	0.13 U	0.14 U	0.16 U	0.18 U	0.37 U	0.27 U	0.22 U	0.20 U
PCB Aroclors											
Total PCBs	12	65	mg/kg OC	3.2	1.6	0.48	2.2	2.0	1.1	0.17 U	0.55

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SSBDC3-D	LDW-SSBDC3-U	LDW-SSBDC4-A	LDW-SSBRSTSD-A	LDW-SSBRSTSD-D	LDW-SSBRSTSD-U	LDW-SSPSF-A
Metals										
Arsenic	57	93	mg/kg dw	11	13	11	20	20	20	20
Cadmium	5.1	6.7	mg/kg dw	0.4	0.4	0.4	0.6	0.6	0.6	0.4 U
Chromium	260	270	mg/kg dw	25.1	24.4	23.8	33	31	32	27
Copper	390	390	mg/kg dw	31.1	29.3	28.8	56.1	66.1	112	53.7
Lead	450	530	mg/kg dw	10	12	13	22	39	19	27
Mercury	0.41	0.59	mg/kg dw	0.07	0.06	0.06	0.14	0.16	0.10	0.12
Silver	6.1	6.1	mg/kg dw	0.5 U	0.6 U	0.5 U	0.6 U	0.6 U	0.7 U	0.7 U
Zinc	410	960	mg/kg dw	72	73	72	117	131	135	106
PAHs										
Acenaphthene	16	57	mg/kg OC	0.90 J	0.80 J	6.3	1.3	7.7	2.1	6.8
Acenaphthylene	66	66	mg/kg OC	1.2 U	1.2 U	1.2 U	0.76 U	0.97 U	2.0	0.89 J
Anthracene	220	1200	mg/kg OC	2.0	0.98 J	8.1	1.7	3.5	7.2	5.0
Benzo(a)anthracene	110	270	mg/kg OC	6.6	6.1	20	6.4	7.2	25	21
Benzofluoranthene	230	450	mg/kg OC	8.4	12	30	8.0	13	68	31
Benzo(g,h,i)perylene	31	78	mg/kg OC	2.3	2.4	8.1	6.0	3.2	22	2.9
Benzo(a)pyrene	99	210	mg/kg OC	3.8	3.9	15	7.2	6.3	34	10
Chrysene	110	460	mg/kg OC	9.0	8.0	23	7.6	14	72	29
Dibenzo(a,h)anthracene	12	33	mg/kg OC	0.96 J	0.86 J	2.9	2.4	1.1	8.5	1.4
Dibenzofuran	15	58	mg/kg OC	1.2 U	1.2 U	1.6	1.0	7.7	1.8	4.5
Fluoranthene	160	1200	mg/kg OC	13	15	51	13	35	33	84
Fluorene	23	79	mg/kg OC	0.90 J	1.2 U	4.1	1.2	13	2.9	5.3
Indeno(1,2,3-cd)pyrene	34	88	mg/kg OC	2.2	2.4	8.1	2.4	2.7	20	3.2
2-Methylnaphthalene	38	64	mg/kg OC	1.2 U	1.2 U	1.2 U	1.4	1.4	0.98	0.84 J
Naphthalene	99	170	mg/kg OC	1.2 U	1.2 U	1.2 U	1.2	1.4	1.2	1.3
Phenanthrene	100	480	mg/kg OC	8.4	4.0	34	6.4	37	15	25
Pyrene	1000	1400	mg/kg OC	13	14	50	10	21	19	63
Total HPAHs	960	5300	mg/kg OC	60 J	67 J	210	64	110	300	250
Total LPAHs	370	780	mg/kg OC	12 J	5.8 J	53	12	63	31	45 J
Phthalates										
Butyl benzyl phthalate	4.9	64	mg/kg OC	0.17 J	0.23 J	0.41	0.72 J	0.87 J	1.0	2.1
Dibutyl phthalate	220	1700	mg/kg OC	1.2 U	1.2 U	1.2 U	0.76 U	0.53 J	1.4	1.1 U
Di-n-octyl phthalate	58	4500	mg/kg OC	1.2 U	1.2 U	1.2 U	0.76 U	0.97 U	0.81 U	1.1 U
Diethyl phthalate	61	110	mg/kg OC	1.2 U	1.2 U	1.2 U	0.76 U	0.97 U	0.81 U	0.74 J
Dimethyl phthalate	53	53	mg/kg OC	0.30 U	0.29 U	0.30 U	0.19 U	0.24 U	0.20 U	0.26 U
Bis(2-ethylhexyl)phthalate	47	78	mg/kg OC	4.5	4.0	4.3	6.4 U	7.2 U	25	8.9

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–3. LDW Outfall Surface Sediment Sample Results for Samples with TOC ≥0.5 or ≤4.0% Compared to SMS Criteria

Chemical	SQS	CSL	Unit	LDW-SSBDC3-D	LDW-SSBDC3-U	LDW-SSBDC4-A	LDW-SSBRSTSD-A	LDW-SSBRSTSD-D	LDW-SSBRSTSD-U	LDW-SSPSF-A
Phenols										
2,4-Dimethylphenol	29	29	µg/kg dw	4.9 U	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U
2-Methylphenol	63	63	µg/kg dw	4.9 U	4.8 U	4.8 U	4.8 U	4.9 U	4.8 U	4.9 U
4-Methylphenol	670	670	µg/kg dw	26	19 U	19 U	320	240	270	210
Pentachlorophenol	360	690	ug/kg dw	24 UJ	24 UJ	24 UJ	24 U	24 U	24 U	15 J
Phenol	420	1200	ug/kg dw	26	11 J	12 J	150	99	120	200
Other SVOCs										
Benzoic Acid	650	650	µg/kg dw	180 J	190 U	190 U	350	400	550	140 J
Benzyl Alcohol	57	73	µg/kg dw	**120**	30	28	**320**	**630**	**410**	**150**
1,2-Dichlorobenzene	2.3	2.3	mg/kg OC	0.30 U	0.29 U	0.30 U	0.19 U	0.24 U	0.20 U	0.26 U
1,4-Dichlorobenzene	3.1	9	mg/kg OC	0.30 U	0.29 U	0.30 U	0.19 U	0.24 U	0.20 U	0.26 U
Hexachlorobenzene	0.38	2.3	mg/kg OC	0.30 U	0.29 U	0.30 U	**1.2**	0.32	0.20 U	0.26 U
Hexachlorobutadiene	3.9	6.2	mg/kg OC	0.30 U	0.29 U	0.30 U	0.19 U	0.24 U	0.20 U	0.26 U
N-Nitrosodiphenylamine	11	11	mg/kg OC	0.30 U	0.29 U	0.30 U	0.19 U	0.24 U	0.20 U	0.26 U
1,2,4-Trichlorobenzene	0.81	1.8	mg/kg OC	0.30 U	0.29 U	0.30 U	0.19 U	0.24 U	0.20 U	0.26 U
PCB Aroclors										
Total PCBs	12	65	mg/kg OC	0.47 U	4.0	1.1	4.8	4.1	4.3	4.4

Detected results in **bold** exceed the SQS.
Detected results in **bold and shaded gray** exceed the CSL.
Nondetected RLs in *italics* exceed the SQS.

Table A–5. LDW Outfall Surface Sediment Sample Results Compared to Natural Background Concentrations for Four LDW RI Risk Driver Chemicals

Sample ID	Arsenic (mg/kg dw)	cPAHs (µg/kg dw)	Total PCBs (µg/kg dw)	Dioxin/Furan TEQ (ng TEQ/kg dw)
LDW-SS2082-U	**20**	**220**	**23**	**6.76 J**
LDW-SS2083-A	**20**	**510**	**17**	na
LDW-SS2085-A	**10**	**40**	**5.6**	na
LDW-SS2089-A	**20**	**330**	**26**	na
LDW-SS2089-D	**10**	**240**	*4.0 U*	na
LDW-SS2090-A	**10**	**55**	**14**	**3.14 J**
LDW-SS2090-D	**20**	**290**	**62 JN**	na
LDW-SS2091-U	**9**	**30 J**	**24**	1.93 J
LDW-SS2092-A	**10**	**63 J**	**67**	na
LDW-SS2093-D	7	**14 J**	**35 J**	na
LDW-SS2094-D	**10**	**49**	**43**	na
LDW-SS2096-A	**9**	**190**	**99**	na
LDW-SS2096-U	**10**	**190**	**32**	na
LDW-SS2097-A	**10**	**39**	**60**	na
LDW-SS2097-D	**10**	**92 J**	**52**	na
LDW-SS2098-A	7	*13 U*	*4.8 U*	0.294 J
LDW-SS2098-D	7	**31 J**	**9.1**	na
LDW-SS2098-U	6 U	*13 U*	*3.9 U*	na
LDW-SS2099-A	7	**17 J**	**12**	0.800 J
LDW-SS2099-D	*10 U*	**39**	**19**	na
LDW-SS2099-U	**8**	**13 J**	**7.3**	na
LDW-SS2103-A	**9**	**24 J**	**37**	1.07 J
LDW-SS2103-D	**12**	**32 J**	**37**	na
LDW-SS2103-U	7 U	**16 J**	**21**	na
LDW-SS2106-A	**10**	**43 J**	**1200**	**3.19 J**
LDW-SS2106-D	**13**	**62**	**140**	na
LDW-SS2106-U	**20**	**72 J**	**200**	na
LDW-SS2108-A	**10**	**75 J**	**100**	na
LDW-SS2108-U	**20**	**69**	**64**	na
LDW-SS2112-A	**20 J**	**310**	**200**	na
LDW-SS2113-A	**10**	**110**	**92**	na
LDW-SS2113-A-2	**10**	**89 J**	**110**	na
LDW-SS2113-U	*8 U*	**48**	**48**	na
LDW-SS2115-A	**10**	**230 J**	**60**	**5.88 J**
LDW-SS2115-D	**9**	**460**	**44**	na
LDW-SS2115-U	**42**	**300 J**	**77**	na
LDW-SS2122-A	**20**	**160**	**20**	**4.82 J**
LDW-SS2122-D	**20**	**580**	**45**	**8.13 J**
LDW-SS2122-U	**20**	**260**	**42**	na
LDW-SS2139-A	**15 J**	**630**	**89**	**6.40 J**
LDW-SS2144-A	**20**	**210**	**22**	na
LDW-SS2146-A	**14**	**86 J**	**23**	na
LDW-SS2147-D	**10**	**130**	**28**	na
LDW-SS2148-A	**32**	**910**	**41**	na
LDW-SS2148-A-2	**34**	**750**	**45**	na
LDW-SS2149-A	**10**	**440**	**150**	na
LDW-SS2150-A	**36**	**130**	**90**	**2.22 J**
LDW-SS2157-A	**20 J**	**330**	**60**	**8.75 J**
LDW-SS2200-A	**12**	**20 J**	**16 J**	1.22 J
LDW-SS2200-D	**10**	**35 J**	**12**	na

Detected sample concentrations in **bold** exceed background levels of 7 mg/kg dw for arsenic, 9 µg/kg dw for cPAHs, 2 µg/kg dw for Total PCBs, and 2 ng TEQ/kg dw for Dioxin/Furan TEQ.

Nondetect sample results in *italics* exceed background levels of 7 mg/kg dw for arsenic, 9 µg/kg dw for cPAHs, 2 µg/kg dw for Total PCBs, and 2 ng TEQ/kg dw for Dioxin/Furan TEQ.

Table A–5. LDW Outfall Surface Sediment Sample Results Compared to Natural Background Concentrations for Four LDW RI Risk Driver Chemicals

Sample ID	Arsenic (mg/kg dw)	cPAHs (µg/kg dw)	Total PCBs (µg/kg dw)	Dioxin/Furan TEQ (ng TEQ/kg dw)
LDW-SS2201-A	**10**	**19 J**	**8.5 J**	1.57 J
LDW-SS2201-D	**10**	**19 J**	**8.0 J**	na
LDW-SS2201-U	**11**	**26 J**	**34**	na
LDW-SS2214-A	**20**	**130**	**290**	na
LDW-SS2214-D	**20**	**140**	**310**	na
LDW-SS2214-U	**20**	**120**	**410**	na
LDW-SS2223-A	**15**	**230**	**130**	na
LDW-SS2232-A	**13**	**47**	**17**	na
LDW-SS2232-D	**8**	**14 J**	**11**	na
LDW-SS2232-U	**12**	**200**	**17**	na
LDW-SS2233-D	**22**	**180**	**69**	na
LDW-SS2233-U	**10**	**27 J**	**28**	na
LDW-SS2244-A	**20**	**130**	**110**	na
LDW-SS2244-D	**20**	**240**	**91**	na
LDW-SS2246-A	**20**	**410**	**250**	na
LDW-SS2246-U	**20**	**510**	**170**	na
LDW-SS2246-U-2	**20**	**630**	**190**	na
LDW-SS2247-A	**20**	**200**	**140**	na
LDW-SS2247-U	**20**	**220 J**	**160**	na
LDW-SS2503-A	7 UJ	**87 J**	**23**	na
LDW-SS2505-A	6 U	**210**	*3.9 U*	na
LDW-SS2506-A	**15**	**180**	**57**	na
LDW-SS2506-D	**16**	**93**	**40**	na
LDW-SS2512-A	**8**	**21 J**	**4.4**	na
LDW-SS2512-U	6	**15 J**	**9.9**	na
LDW-SS3037-A	**10**	**28 J**	**23**	1.86 J
LDW-SS3037-D	**13**	**41**	**55**	na
LDW-SS3037-D-2	**13**	**110**	**31**	na
LDW-SS3037-U	**10**	**34 J**	**29**	na
LDW-SS5000-A	**20 J**	**180**	**140**	**23.4 J**
LDW-SS5000-D	**20 J**	**200**	**130**	na
LDW-SS5000-U	**20 J**	**170**	**140**	na
LDW-SS5002-A	**86**	**500**	**680**	na
LDW-SS5002-D	**20**	**250**	**140**	na
LDW-SS5003-A	**67**	**270**	**750**	na
LDW-SS5005-A	**50**	**270**	**94**	na
LDW-SS6146-A	**10**	**48**	**54**	**3.17 J**
LDW-SS6146-D	**10**	**70**	**14**	na
LDW-SS6146-U	**20**	**52**	**62**	na
LDW-SSBDC2-A	**13**	**79**	**26**	na
LDW-SSBDC2-A-2	**13**	**72 J**	**20**	na
LDW-SSBDC2-D	**10**	**38**	*3.9 U*	na
LDW-SSBDC2-U	**11**	**78 J**	**13**	na
LDW-SSBDC3-D	**11**	**100 J**	*7.8 U*	na
LDW-SSBDC3-U	**13**	**100 J**	**66**	na
LDW-SSBDC4-A	**11**	**360**	**17**	na
LDW-SSBRSTSD-A	**20**	**250**	**120**	na
LDW-SSBRSTSD-D	**20**	**190**	**84**	na
LDW-SSBRSTSD-U	**20**	**1200**	**100**	na
LDW-SSPSF-A	**20**	**310**	**84**	**8.49 J**

Detected sample concentrations in **bold** exceed background levels of 7 mg/kg dw for arsenic, 9 µg/kg dw for cPAHs, 2 µg/kg dw for Total PCBs, and 2 ng TEQ/kg dw for Dioxin/Furan TEQ.

Nondetect sample results in *italics* exceed background levels of 7 mg/kg dw for arsenic, 9 µg/kg dw for cPAHs, 2 µg/kg dw for Total PCBs, and 2 ng TEQ/kg dw for Dioxin/Furan TEQ.