FINAL 2022 ANNUAL REPORT

REMEDIAL ACTION
ENHANCED ANAEROBIC BIOREMEDIATION

Boeing Developmental Center
Tukwila, Washington

May 19, 2023

Prepared for

The Boeing Company
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2022 Annual Report
Remedial Action
Enhanced Anaerobic Bioremediation
Boeing Developmental Center

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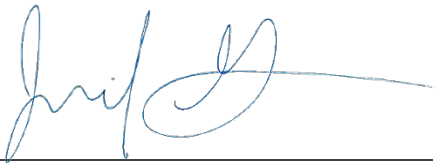
Document prepared by:  Jenny Green, EIT
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LIST OF ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter
µmoles/L	micromoles per liter
AMEE	acetylene, methane, ethane, ethene
AOC	Area of Concern
ARLLC	Analytical Resources, LLC
Boeing	The Boeing Company
BTEX	benzene, toluene, ethylbenzene, and xylenes
cDCE	cis-1,2-dichloroethene
CO_2	carbon dioxide
DC	Developmental Center
DO	dissolved oxygen
Ecology	Washington State Department of Ecology
EPA	US Environmental Protection Agency
$FeCl_2$	ferrous chloride
ft	feet, foot
IA	interim action
IAWP	interim action work plan
Landau	Landau Associates, Inc.
mg/L	milligrams per liter
mg-N/L	milligrams per liter as nitrogen
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
NAPL	non-aqueous phase liquid
ORP	oxidation-reduction potential
ORC®	Oxygen Release Compound
PCE	tetrachloroethene
PCUL	proposed cleanup level
RCRA	Resource Conservation and Recovery Act
redox	reduction-oxidation
SWMU	Solid Waste Management Unit
TCE	trichloroethene
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TPH-G	gasoline-range total petroleum hydrocarbons
UST	underground storage tank
VC	vinyl chloride
VCP	voluntary cleanup program
VOC	volatile organic compound
WAC	Washington Administrative Code

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1.0 INTRODUCTION

This document presents a 2022 annual report for the interim actions (IAs) underway at The Boeing Company's (Boeing) Developmental Center (DC) in Tukwila, Washington (Figure 1). The DC is a regulated facility under the Resource Conservation and Recovery Act (RCRA) with a facility identification number of WAD093639946. 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) regulations.

IAs are underway at Area of Concern (AOC)-05, Solid Waste Management Unit (SWMU)-17, and SWMU-20. Boeing has performed these IAs at the DC under Ecology's Voluntary Cleanup Program (VCP), and this work will continue under Agreed Order No. DE 16275 signed July 23, 2019, and per the information presented in the Interim Action Work Plan (IAWP; Landau Associates, Inc. [Landau] 2019b). Beginning with the 2018 report, annual reporting for the three IAs was combined into a single report (Landau 2019a).

1.1 Site Description

The DC site is located at 9725 East Marginal Way South in Tukwila, Washington near Boeing Field and the Military Delivery Center (Figure 2). The site is bounded by the Duwamish Waterway on the west and East Marginal Way South on the east. Boeing has been operating on portions of this site since 1956 (SAIC 1994), and the site currently consists of more than 30 buildings on approximately 117 acres. The DC is an aircraft and aerospace research and development complex, primarily supporting projects for the US Department of Defense. Activities that have occurred at the DC facility include research and development programs and manufacturing (Boeing 2009, SAIC 1994). The DC facility continues to be the primary research and development center for carbon fiber composite structures.

1.2 Background

Under its RCRA corrective action authority, the EPA conducted a RCRA Facility Assessment in 1994 and identified 157 SWMUs and five AOCs at the DC (SAIC 1994). Each of these SWMUs and AOCs was evaluated in a comprehensive Summary Report prepared for Boeing by Landau (2002). Based on this initial evaluation and the demonstration that they did not pose a threat to human health or the environment, Ecology approved the exclusion of most SWMUs and AOCs from further investigation.

After approving the Summary Report (Landau 2002), Ecology determined that only two SWMUs (SWMU-17 and SWMU-20) and three AOCs (AOC-01/02, AOC-03/04, and AOC-05) remained subject to continued monitoring and evaluation. Following additional groundwater monitoring at AOC-01/02 and AOC-03/04 (Boeing 2002, 2003), Ecology agreed that no further monitoring or other remedial action was required.

IAs are underway at three areas requiring further remedial action (AOC-05, SWMU-17, and SWMU-20), as described in the following sections. A site plan showing the specific IA areas, including monitoring

wells and facility buildings of interest, is presented on Figure 3. Groundwater elevation contours in the vicinity of the three areas for May and November 2022 are presented on Figures 4 and 5, respectively.

1.2.1 AOC-05

AOC-05 is located in the vicinity of Building 9-61 (Figure 3). This AOC consists of a former 1,000-gallon steel underground storage tank (UST) designated as DC-01 and a former associated pump island, which were located approximately 25–30 feet (ft) south of the southwest corner of Building 9-61. UST DC-01 contained unleaded gasoline and was removed in 1985 after it was punctured by a measuring rod and released approximately 830 gallons of unleaded gasoline (Landau 2004). Contaminants targeted by IA in AOC-05 are gasoline-range total petroleum hydrocarbons (TPH-G) and benzene, toluene, ethylbenzene, and xylenes (BTEX).

1.2.2 SWMU-17

SWMU-17 is located west of Building 9-64 (Figure 3). This SWMU consists of a former 67-gallon sump and former 4,000-gallon steel UST designated DC-05. Waste oil generated by the hydraulic testing shops, automotive maintenance shops, and other operations at the DC was poured into the sump, which drained to the UST. Periodically, waste oil was pumped from the UST for offsite treatment and disposal. Both the sump and UST were removed in 1986 (Landau 2004). Contaminants targeted by IA in SWMU-17 are volatile organic compounds (VOCs), arsenic, and copper. The specific VOCs of concern are tetrachloroethene (PCE) and its breakdown products (trichloroethene [TCE], cis-1,2-dichloroethene [cDCE], and vinyl chloride [VC]).

1.2.3 SWMU-20

SWMU-20 is located at the northwest corner of Building 9-101 (Figure 3). This SWMU consists of a former vapor degreaser located in the northwest corner of Building 9-101. PCE and TCE were reportedly used during the operation of the degreaser from 1956 to 1984. The vapor degreaser, associated piping, and other equipment were removed in 1984 and all openings through walls and floor slabs were plugged. The concrete-lined degreaser pits and sumps were backfilled with compacted sand material and capped with 10 inches of concrete slab (Landau 2004). Contaminants targeted by IA in SWMU-20 are VOCs resulting from a suspected solvent leak from the former vapor degreaser pit. Specific VOCs of concern are PCE, TCE, and breakdown products (cDCE and VC), as well as benzene and naphthalene.

2.0 AOC-05

This section describes the IA underway in AOC-05. A description of the remedial approach and a summary of previous work is provided. IA activities and performance monitoring results are presented for the 2022 reporting period.

2.1 Remedial Approach

Anaerobic bioremediation is performed as the IA at AOC-05 through stimulation of microorganisms present in the aquifer to degrade petroleum hydrocarbons. The addition of nitrate (electron acceptor) allows native bacteria to utilize total petroleum hydrocarbons (TPH; electron donors) as a source of energy. Biodegradation of TPH can occur under both aerobic and anaerobic conditions and is the result of microbially mediated reduction-oxidation (redox) reactions. In these redox reactions, TPH are used as the electron donor, while various other compounds are utilized as electron acceptors when available (e.g., oxygen, nitrate, manganese [IV], iron [III], sulfate, carbon dioxide [CO_2]). Bacteria gain the most energy by utilizing oxygen as an electron acceptor because it is a highly oxidized compound, meaning it can more readily accept electrons from electron donors, like TPH. When oxygen is depleted, microorganisms preferentially use less oxidized electron acceptors in the following order, based on energy gained: nitrate, manganese (IV), iron (III), sulfate, and CO_2.

In aquifers that are naturally anaerobic, with low dissolved oxygen (DO) and high natural organic carbon, it may be more effective to stimulate anaerobic bioremediation instead of aerobic bioremediation. Naturally anaerobic aquifers, like at the DC, have a high natural oxygen demand that makes oxygen addition ineffective for stimulation of aerobic bioremediation. Nitrate is the ideal electron acceptor to stimulate anaerobic bioremediation.

In 2002, an attempt to stimulate aerobic bioremediation of TPH-G at AOC-05 through injection of Oxygen Release Compound (ORC®; Landau 2004) was unsuccessful because of the high oxygen demand in the naturally anaerobic aquifer. As a result, the IA has stimulated anaerobic bioremediation through injection of nitrate as an electron acceptor. Nitrate amendment to enhance anaerobic biodegradation has been successfully implemented on other full-scale remediation projects for gasoline-range and fuel oil-range TPH, both nationally (Lozier and Hicks 2005, Wasserman et. al. 2005) and in Washington State (Landau 2012).

2.2 Summary of Prior Work and Findings

Prior to the reporting period, work at AOC-05 included bioremediation pilot testing, monitoring and injection well installation, baseline sampling, full-scale treatment, and performance groundwater monitoring. Pilot testing of nitrate injection in 2007 using a single injection well (BDC-103; Landau 2006a) was expanded to full-scale treatment in 2008 utilizing existing injection well BDC-103 and new injection well BDC-104. Eleven full-scale nitrate injections have been performed through the last injection in December 2016. Injection events are detailed in the IAWP (Landau 2019b) and prior annual reports for AOC-05.

2.2.1 Pilot Testing

Bioremediation pilot testing in 2007 demonstrated degradation of petroleum hydrocarbons resulting from a one-time addition of ammonium nitrate (Landau 2007a). Post-injection monitoring showed that concentrations of TPH-G decreased by about 50 percent, compared to baseline, over 4 months of post-injection monitoring. BTEX compounds decreased as much as 98 percent (Landau 2007a). As expected, contaminant concentrations rebounded upon depletion of injected nitrate as groundwater returned to equilibrium with sorbed mass and non-aqueous phase liquid (NAPL) mass remaining in the aquifer. Based on these promising pilot test results, full-scale anaerobic bioremediation was implemented as described below.

2.2.2 Well Installation and Baseline Sampling

Full-scale implementation of anaerobic bioremediation began in February 2008 with the installation of one additional injection well (BDC-104) and baseline sampling of all four AOC-05 wells (BDC-101, BDC-102, BDC-103, and BDC-104). The new injection well (BDC-104) was installed upgradient (east) and crossgradient (north) of existing injection well BDC-103, located within the former UST tank pit. BDC-104 is located near the known upgradient edge of contamination associated with the former UST (Landau 2004). Injection of both wells allowed for groundwater transport of injected nitrate solution to the area of highest contamination.

Baseline sampling was performed prior to full-scale treatment to determine initial contaminant concentrations and aquifer redox conditions at the four AOC-05 wells (BDC-101, BDC-102, BDC-103, and BDC-104). Baseline results indicated nitrate- to sulfate-reducing conditions at source zone wells BDC-103 and BDC-104, nitrate- to iron-reducing conditions at downgradient well BDC-102, and aerobic to nitrate-reducing conditions at downgradient well BDC-101. The same conditions were indicated by pre-pilot test monitoring (Landau 2006a). Baseline TPH-G concentrations at both source zone wells (BDC-103 and BDC-104) were in excess of the preliminary screening level, and baseline benzene concentrations at BDC-103 exceeded the preliminary screening level (preliminary screening levels in use at that time were developed in the Summary Report [Landau 2002]). TPH-G and BTEX were not detected at downgradient wells BDC-101 and BDC-102 during baseline sampling but had been during prior sampling. Baseline sampling results and proposed cleanup levels (PCULs) are included in the data summary presented in Table 1.

2.2.3 Full-Scale Bioremediation and Performance Results

Eleven full-scale nitrate injections to stimulate bioremediation in AOC-05 were performed from 2002 through 2016. Performance monitoring results from 2008 through 2018 indicated effective treatment of TPH-G and BTEX at source zone wells BDC-103 and BDC-104, while maintaining relatively low or non-detect contaminant levels at downgradient wells BDC-101 and BDC-102. As was observed during the pilot test, contaminant concentrations have demonstrated some degree of rebound at well BDC-103 following the depletion of injected nitrate, prompting additional nitrate injection. Rebound will continue to occur as long as contaminant mass remains in the sorbed-phase or as NAPL within the aquifer or in

upper portions of the smear zone that are periodically contacted by the water table. The historical timeline of AOC-05 bioremediation is summarized as follows:[1]

- Nitrate solution was injected to both wells BDC-103 and BDC-104 a total of five times during 2008 and 2009. Post-injection monitoring results demonstrated that concentrations had declined below PCULs at BDC-104 following the fifth injection. As a result, injection was discontinued at BDC-104.
- Following the sixth injection in September 2010, contaminant concentrations at BDC-103 decreased to historical lows in February 2011.
- Repeated cycles of nitrate depletion and contaminant rebound prompted a seventh and an eighth injection in 2012 and a ninth injection in November 2013.
- In February 2013, contaminant concentrations at all wells declined below the PCULs for the first time since treatment began.
- In May 2014, contaminant concentrations at all wells declined to below their reporting limits for the first time since treatment began.
- The 2013 injection was followed by a period of slow nitrate consumption and a tenth injection was not needed until March 2016. Slower utilization of nitrate between 2013 and 2016 is indicative of decreased TPH mass remaining in the source.
- Contaminant concentrations rebounded once again in August and November 2016 at BDC-103, which prompted the eleventh nitrate injection in December 2016.
- While significantly lower than in 2016, contaminate concentrations rebounded again in November 2019 at BDC-103, prompting a twelfth injection in February 2023.

TPH concentration rebound in 2016 followed a period of higher groundwater levels. The higher water table caused groundwater to contact higher portions of the contaminant smear zone not treated by prior injection events, resulting in increased TPH concentrations in groundwater. Groundwater elevations over time at AOC-05 are shown on Figure 6. The highest groundwater elevations recorded in AOC-05 occurred in spring of 2016 and 2018. Cumulative performance monitoring results are presented in Table 1.

As indicated in the AOC-05 Work Plan (Landau 2007b), Ecology required an action level for nitrate of 10 milligrams nitrogen per liter (mg-N/L) for IA at AOC-05. Detection of nitrate above the action level at either of the two nearest downgradient wells (BDC-101 or BDC-102) for two consecutive sampling events triggers implementation of additional groundwater monitoring at four wells (BDC-05-04, MW-17A, MW-18A, and MW-21A) located farther downgradient (Figure 3). Semiannual monitoring for nitrate is required to continue at these four downgradient wells for 1 year after nitrate at wells BDC-101 and BDC-102 decreases below 10 mg-N/L. Based on continued periodic exceedances of the action level at wells BDC-101 and BDC-102, semiannual nitrate monitoring has been performed at the four downgradient wells since November 2009. Nitrate has not been detected above the 10 mg-N/L action

[1] Additional details of each injection are provided in the footnotes to Table 1.

level at the four furthest downgradient wells (BDC-05-04, MW-17A, MW-18A, and MW-21A). Cumulative downgradient nitrate results are included in Table 2.

2.3 2022 Activities

Activities in AOC-05 for 2022 included two semiannual monitoring events. Monitoring events were conducted at the four AOC-05 wells and also included measurement of nitrate at further downgradient wells. No nitrate injections were performed.

Bioremediation progress was evaluated through monitoring performed in May and November 2022. Groundwater levels were measured during both events. In accordance with the AOC-05 Work Plan (Landau 2007b) and the IAWP (Landau 2019b), samples were analyzed for contaminant concentrations (TPH-G and BTEX) and parameters indicative of aquifer redox conditions (DO, oxidation-reduction potential [ORP], nitrate, ferrous iron, sulfate, and pH). Samples were also analyzed for nitrite, a short-lived intermediary product of nitrate reduction. TPH-G, BTEX, nitrate, nitrite, and sulfate were analyzed in the laboratory, while other parameters (DO, ORP, ferrous iron, and pH) were measured in the field. All laboratory analyses were performed by Analytical Resources, LLC (ARLLC) in Tukwila, Washington. Cumulative monitoring results for the four AOC-05 wells (BDC-101 through BDC-104) are presented in Table 1. Laboratory reports for the reporting period are presented in Appendix A. Groundwater elevation contours for May and November 2022 are presented on Figures 4 and 5, respectively. Cumulative groundwater levels are presented in Appendix B.

Semiannual monitoring for nitrate continued in May and November 2022 at the four monitoring wells located farther downgradient of AOC-05 (MW-17A, MW-18A, MW-21A, and BDC-05-04). Monitoring well analytical results are presented in the following tables and figures: Cumulative monitoring results for wells BDC-101 through BDC-104 are presented in Table 1, with results compared to PCULs (Landau 2013b). Cumulative monitoring results for downgradient nitrate monitoring are presented in Table 2. Groundwater elevations are presented on Figure 6. Concentrations of TPH-G and BTEX compounds at BDC-103 and BDC-104 over time are presented on Figures 7 and 8, respectively.

2.4 2022 Results and Discussion

Monitoring results through 2022 continue to suggest that bioremediation of TPH-G and BTEX is nearing completion in AOC-05, but additional nitrate injection is required to complete treatment of residual contaminant mass. This is indicated by the extended period of contaminant concentrations below the PCULs followed by slight rebounds and depleted nitrate in November 2019, 2020, 2021, and 2022. Highlights from 2022 results are as follows:

- Contaminant Reduction: Contaminant concentrations at all four AOC-05 wells remained below the PCULs and/or below the laboratory reporting limits for 3 years from November 2016 until November 2019. At BDC-103, TPH-G and BTEX concentrations rebounded slightly in November 2019, while concentrations at the other three AOC-05 wells remained below PCULs and/or below reporting limits. In May 2020, TPH-G and BTEX concentrations at all four AOC-05 wells were below PCULs and/or reporting limits. Ethyl benzene was above the PCUL again in November 2020.

The above illustrates a pattern of slight rebound in one or more constituents at BDC-103 in November for 4 years running (2019, 2020, 2021, and 2022) and concentrations below PCULs/reporting limits in May of the same years. The reason for this fluctuation is not yet understood, but evaluation of this phenomena will continue as groundwater monitoring data is collected during 2023. The groundwater elevation at BDC-103 was highest in May of 2019, 2020, and 2022, and in November of 2021, demonstrating that the periodic rebound in contaminant concentration is not always tied to a higher water table condition.

- Nitrate: Nitrate at BDC-103 remained elevated for 3 years after the last injection in December 2016. Nitrate reached an all-time maximum of 215 mg-N/L in May 2017, approximately 5 months post-injection, and persisted at 113 mg-N/L in May 2019, 29 months post-injection. Since May 2019, nitrate concentrations have fluctuated between non-detect and approximately 49–62 mg-N/L (May of 2020, 2021, and 2022). Very low or non-detect nitrate concentrations are coincident with the slight rebounds in TPH-G and BTEX concentrations observed in 2019, 2020, 2021, and 2022, while elevated nitrate concentrations are coincident with non-detect TPH-G and BTEX concentrations. As with the contaminant concentrations, this prominent fluctuation in nitrate concentrations is not fully understood but may be caused by periodic fluctuations in groundwater flow direction through BDC-103. Additional nitrate injection is needed to address periodic TPH and BTEX rebound.
- Groundwater Elevations: The May and November 2022 groundwater elevations in AOC-05 were lower than their respective 2016–2018 elevations, which was a period of time when groundwater elevations were high. Historically, outside of a few anomalous years, groundwater elevations in AOC-5 are lower in November than in May; this was the case in 2022.
- Downgradient Monitoring: Nitrate concentrations at BDC-101 and BDC-103 exceeded the 10-mg-N/L action level during the May 2022 monitoring event but were below the action level in November 2022. Based on these results, semiannual nitrate monitoring will continue at the four downgradient wells in May 2023.
- Nitrite: Detection of low levels of nitrite is a result of nitrate reduction. Nitrite is a highly reactive, short-lived compound that is further reduced to nitrous oxide, nitric oxide, and finally nitrogen gas (Environment Agency 2005). Nitrite has been commonly detected at injection wells since the start of full-scale injection activities but has not persisted. Nitrite was not detected at any well during 2022. This data confirms that nitrite continues to be further reduced in the treatment area.

3.0 SWMU-17

This section describes the IA in SWMU-17. A description of the remedial approach and a summary of previous work is provided. IA activities and performance monitoring results are presented for the 2022 reporting period.

3.1 Remedial Approach

IA at SWMU-17 consists of anaerobic bioremediation, which is accomplished through stimulation of microorganisms present in the aquifer to enhance reductive dechlorination of chlorinated ethenes. The addition of electron donor substrates stimulates the required reduced aquifer conditions and the biological reductive dechlorination of PCE and its breakdown products TCE, cDCE, and VC.

Reductive dechlorination of PCE and TCE occurs through microbially mediated (biotic) reactions, whereby microorganisms obtain energy through redox reactions. Anaerobic conditions are required for reductive dechlorination of PCE/TCE and breakdown products. Electron donors (natural organic carbon or injected substrates) are used by microbes to sequentially reduce the natural electron acceptors (oxygen, nitrate, manganese [IV], iron [III], sulfate, and CO_2), resulting in successively more reduced aquifer conditions. When oxygen is depleted, bacteria sequentially use the less-oxidized electron acceptors in the following order: nitrate, manganese (IV), iron (III), sulfate, and CO_2.

Chlorinated ethenes can also be used as electron acceptors by dechlorinating microorganisms. In this process, PCE and its breakdown products are used as electron acceptors and degraded to less chlorinated breakdown products. Degradation occurs sequentially from PCE through TCE, cDCE, and VC, to innocuous end products ethene and ethane. PCE is the most oxidized electron acceptor in typical groundwater systems after oxygen and, therefore, can be reduced as soon as oxygen is depleted (Vogel et al. 1987). TCE, cDCE, and VC, however, require successively more reducing aquifer conditions for degradation. Depletion of natural electron acceptors (e.g., oxygen, iron, sulfate, CO_2) creates the highly reducing aquifer conditions (sulfate-reducing to methanogenic conditions) required for complete reductive dechlorination of PCE and breakdown products.

Reductive dechlorination is enhanced through the injection of fermentable substrates (e.g., vegetable oil and lactate) as a source of electron donors for aquifer microorganisms. Substrates are injected into the contaminated aquifer, where a consortium of indigenous bacteria first ferment the substrate to volatile fatty acids and hydrogen. Other bacteria in this consortium then use these fermentation products to reduce natural electron acceptors and chlorinated ethenes.

3.2 Summary of Prior Work and Findings

Prior to 2019, field activities consisted of pilot testing, installation of injection and monitoring wells, baseline sampling, full-scale injections to stimulate anaerobic bioremediation, and performance groundwater monitoring. Two full-scale electron donor injection events were performed in 2011 and 2017; injection events and other IA work previously performed in SWMU-17 are described in detail in the IAWP (Landau 2019b) and prior annual reports.

3.2.1 Pilot Testing

A pilot test was performed in October 2008 to determine if electron donor (sodium lactate and vegetable oil) and ferrous sulfate amendments could successfully enhance anaerobic biodegradation of PCE and immobilization of copper and arsenic. One monitoring well (BDC-05-02) received injection solution containing the electron donor and ferrous sulfate amendments.

Monitoring results demonstrated that bioremediation of PCE at SWMU-17 was successfully stimulated by the electron donor pilot test injection. However, the relatively limited extent of PCE and TCE treatment observed during the pilot test indicated that the radius of injection created was smaller than anticipated and that the downgradient transport of electron donor was slow (Landau 2010b). Over the course of the pilot test, PCE and TCE concentrations decreased substantially at SWMU-17, but the lack of substantial VC, ethene, or ethane production indicated that the process of reductive dechlorination was incomplete. Copper and arsenic concentrations remained within the range of pre-injection results (Landau 2010b). Based on pilot test results, full-scale bioremediation of PCE and breakdown products was undertaken as described below.

3.2.2 Well Installation and Baseline Sampling

Full-scale IA began with installation of additional groundwater wells. Sixteen additional wells (BDC-05-09 through BDC-05-24) were installed for injection and/or monitoring in July 2011. This supplemented six existing wells (BDC-05-02 through BDC-05-05, BDC-05-07, and BDC 05-08) for a total of 22 wells utilized for IA in SWMU-17. Well locations are presented on Figure 3.

Baseline sampling was performed immediately following new well installation in July 2011, followed by quarterly (10 wells) and semiannual (22 wells) post-injection sampling through 2017 in accordance with the SWMU-17 Work Plan (Landau 2011). In 2018, monitoring transitioned to a semiannual frequency. Samples were analyzed for target contaminants and breakdown products (PCE, TCE, cDCE, and VC); non-toxic end products (ethene and ethane); parameters indicative of aquifer redox conditions (DO, ORP, nitrate, ferrous iron, sulfate, and methane);[2] total organic carbon (TOC) and pH indicative of electron donor; and total and dissolved copper and arsenic. Laboratory analysis of acetylene, methane, ethane, and ethene (AMEE) was performed at select wells.[3]

3.2.3 Full-Scale Electron Donor Injections

Two full-scale electron donor injections were performed in SWMU-17 from 2011 through 2017. Various electron donor substrates have been used to stimulate treatment of PCE and TCE; additional amendments have also been added to the injection solution to provide secondary benefits. The injection timeline for this area is as follows:

[2] Nitrate, which was consistently not detected, was determined to not be useful for evaluation of aquifer redox conditions at SWMU 17, and nitrate analysis was discontinued beginning in May 2012 (Landau 2013a).
[3] AMEE was added to wells BDC-05-03, BDC-05-21, and BDC-05-24 beginning with the May 2013 semiannual sampling event to improve evaluation of treatment progress (Landau 2013a).

- The first full-scale electron donor injection was performed at 11 wells in August 2011. Each of the 11 wells (BDC 05-02, BDC-05-07, and BDC-05-09 through BDC-05-17) was injected with injection solution containing LactOil®, a combination donor substrate containing both soluble (fast-release) ethyl lactate and insoluble (slow-release) soybean oil.
- A second, focused electron donor injection was performed at five wells in November 2017. The purpose of this injection was to address PCE and/or TCE concentrations that were greater than 1 microgram per liter (µg/L) within the source area. Injection solution containing molasses was delivered to each of the five wells (BDC-05-02, BDC-05-03, BDC-05-04, BDC-05-07, and BDC-05-10); molasses was used as the soluble (fast-release) electron donor instead of LactOil. Each well was also injected with ferrous chloride ($FeCl_2$) solution to provide ferrous iron for formation of iron sulfides. Iron sulfides are produced as a reactive coating on aquifer minerals when sulfate present in the molasses is reduced to sulfide and the sulfide complexes with ferrous iron. PCE, TCE, and cDCE are degraded abiotically on contact with iron sulfides to short-lived and non-toxic acetylene compounds without the production of VC. This favorable abiotic destruction mechanism is complementary and occurs simultaneously with biotic reductive dechlorination of TCE (Landau 2017).

3.2.4 Summary of Prior Results

Post-injection monitoring results through November 2021 (about 10 years after the first injection) indicated that bioremediation was substantially enhanced by the electron donor injection. Evidence of biodegradation consisted of elevated TOC; more highly reduced aquifer redox conditions; and changes in concentrations of PCE, TCE, breakdown products, and end products. Continued production of end products ethene and ethane indicated complete reductive dechlorination through to non-toxic end products (Landau 2020).

Baseline data showed conditions conducive to limited biodegradation of PCE and TCE. The highest baseline concentrations of PCE and TCE were 39 µg/L (BDC-05-10) and 28 µg/L (BDC-05-15), respectively. cDCE, the first reductive dechlorination sequential breakdown product, was commonly detected (detections ranged from 0.2 to 58 µg/L), but VC and end products ethene and ethane were not detected. Baseline aquifer redox conditions were variable, with more highly reducing conditions (sulfate-reducing to methanogenic) occurring at source zone wells BDC-05-02 and BDC-05-07 because of prior pilot testing, and predominantly mild to moderately reducing conditions (nitrate- to iron-reducing) occurring elsewhere in the plume. TOC concentrations were below 10 milligrams per liter (mg/L) at most wells, which is a threshold generally considered to represent sufficient electron donor to support substantial reductive dechlorination (Major et al. 2003). Enhanced natural attenuation of lower chlorinated VOC concentrations can be supported by lower TOC concentrations.

3.3 2022 Activities

Activities in 2022 consisted of two semiannual performance monitoring events at all 22 wells to evaluate ongoing treatment and included measurement of groundwater elevations. No injections were performed in 2022.

Samples collected during monitoring events were analyzed for target contaminants and breakdown products (PCE, TCE, cDCE, and VC); parameters indicative of aquifer redox conditions (DO, ORP, ferrous

iron, and sulfate); TOC and pH indicative of electron donor; and total and dissolved copper and arsenic. Laboratory analysis of AMEE was also performed at all wells except four (BDC-05-05, BDC-05-08, BDC-05-22, and BDC-05-23). Laboratory analysis of contaminant and breakdown products, sulfate, TOC, metals, and AMEE was performed by ARLLC in Tukwila, Washington. Parameters DO, ORP, ferrous iron, and pH were measured in the field. Groundwater monitoring data are presented in Table 3. Laboratory reports for the reporting period are presented in Appendix A.

Groundwater elevations were measured during the May and November 2022 semiannual sampling events. Consistent with previous measurements, groundwater flow is generally west-southwesterly in direction. These groundwater flow directions are consistent with the alignment of the contaminant plume. Groundwater elevation contours for May and November 2022 are presented on Figures 4 and 5, respectively. Cumulative groundwater elevations for SWMU-17 wells are presented in Appendix B.

3.4 2022 Results and Discussion

This section presents discussion and interpretation of data collected during 2022. Groundwater monitoring results show that aquifer conditions continue to be enhanced for anaerobic bioremediation, as indicated by TOC concentrations that increased after the 2017 injection and remain above baseline and by highly reducing (sulfate-reducing to methanogenic) aquifer redox conditions. Detections of end products ethene and/or ethane demonstrate continued complete reductive dechlorination of the toxic parent and breakdown products to non-toxic end products. November 2022 data were collected about 11 years following the first electron donor injection in August 2011 and about 5 years from the focused second injection in November 2017.

Monitoring results, including VOC molar fractions, are summarized in a cumulative data table (Table 3), presented on various figures and appendices, and discussed further in the following sections. Appendix C presents time plots of VOC concentrations at representative injection wells and monitoring wells. Time plots for molar concentrations of VOCs and breakdown products for the same representative wells are presented in Appendix D. Time plots of redox parameters (methane and sulfate) and TOC for the representative wells are presented in Appendix E.

3.4.1 Reductive Dechlorination of VOCs

Enhanced reductive dechlorination following the August 2011 and November 2017 donor injections has resulted in substantially decreased PCE/TCE concentrations, with conversion through intermediary breakdown products cDCE and VC to end products ethene and ethane. During 2022, PCE, TCE, cDCE, and VC concentrations were below PCULs at all wells except BDC-05-18 and BDC-05-22. TCE was detected at BDC-05-18 at 1.70 µg/L in May and at 1.53 µg/L in November; both concentrations are only slightly above the PCUL of 1.4 µg/L. VC was detected at BDC-05-22 at 2.42 µg/L in May and at 4.13 µg/L in November; both VC concentrations are the highest ever detected at this well. Neither PCE nor cDCE was detected above their respective PCULs in 2022. PCE/TCE concentrations in groundwater are presented on Figure 9 for November 2022. November 2022 VC concentrations in groundwater are presented on Figure 10.

At well BDC-05-10, which had the highest baseline concentration of PCE and the second highest TCE concentration, PCE and TCE have remained persistently less than the reporting limit from May 2012 through 2022; this represents a concentration reduction of greater than 99 percent.

Complete reductive dechlorination resulting from bioremediation treatment has been evidenced by occurrence and molar predominance of the innocuous end products ethene and ethane. Ethene+ethane represented just 1.7 percent of the total ethenes (i.e., 1.7 percent molar fraction) during baseline sampling in July 2011. Because of biodegradation stimulated by the 2011 injections, the ethene+ethane molar fraction increased to a maximum level of 91.5 percent in November 2016. Ethane was detected in both May and November 2022. The number of wells where ethene+ethane is detected has generally decreased over time, as treatment results in more wells that are low to non-detect for PCE, TCE, cDCE, and VC. During 2022, ethene and/or ethane were detected at seven of the 18 wells where analyzed; this compares to ethene and/or ethane detected at eight wells in 2021 and at 15 wells in 2016.

Figure 11 presents the percentage (average molar fraction) of total ethenes contributed by PCE, TCE, cDCE, VC, and ethene+ethane over time for all 18 wells in SWMU-17 where ethene and ethane are analyzed; the shift from parent product and breakdown product predominance to predominance of non-toxic ethene+ethane is readily apparent from November 2012 to May 2019. In May 2019, ethene+ethane constituted just more than 50 percent of total ethenes detected on a molar basis. Following two sampling events showing VC predominance (November 2019 and May 2020) as a result of enhanced desorption and treatment following the 2017 injection, ethene+ethane has remained predominant. In 2022, ethene+ethane constituted an average of 93 percent of total ethenes, where detected. The continued predominance of ethene+ethane from November 2020 through November 2022 confirms continued complete reductive dechlorination through to these non-toxic end products.

The succession of chlorinated ethene conversion to innocuous end products results in a decrease in total chlorinated ethenes concentrations (micromoles per liter [µmoles/L]) over time. Total chlorinated ethenes is the molar sum of PCE + TCE + cDCE + VC. A decrease in the concentration of total chlorinated ethenes demonstrates mass destruction, not just conversion to a less-chlorinated breakdown product (e.g., TCE to VC). Initial periods of increased total chlorinated ethenes commonly indicate enhanced desorption of contaminant mass that was partitioned to the aquifer soil matrix and liberated by surfactant properties of the injected donor solution and by biosurfactants released by stimulated bacteria. Decreasing concentrations of total chlorinated ethenes reflects the final conversion step from VC to non-chlorinated end products ethene and ethane. Total chlorinated ethenes are tabulated in Table 3 and are shown on time plots for representative wells in Appendix D. Figure 11 presents a time plot of average total chlorinated ethenes for all SWMU-17 wells. As shown on Figure 11, the average total chlorinated ethenes increased through May 2012 due to enhanced desorption; it then decreased substantially through 2022. Average total chlorinated ethenes through November 2022 show a substantial reduction (approximately 96 percent) compared to baseline and a 97 percent reduction compared to the May 2012 peak.

In summary, data show that PCE and its associated breakdown products have been effectively converted to non-toxic end products by bioremediation in SWMU-17. Comparison of current contaminant

concentrations to PCULs indicates that treatment is in its final stages. As of November 2022, PCE, TCE, cDCE, and VC concentrations were below PCULs at 20 wells, with the exception of a minor exceedance for TCE at BDC-05-18 and VC at BDC-05-22. Ongoing detection and long-term predominance of ethene+ethane has confirmed complete reductive dechlorination to these non-toxic end products. No additional electron donor injections are needed at this time.

3.4.2 TOC and Redox Conditions

Monitoring results indicate aquifer TOC and/or redox conditions have been enhanced throughout the core of the contaminant plume and at many of the crossgradient and downgradient monitoring wells following the August 2011 and November 2017 electron donor injections. These results indicate conditions conducive to continued enhanced bioremediation of PCE,TCE, and breakdown products. As a result of the November 2017 injection, TOC increased from near baseline levels (5.3 to 33 mg/L) at the five injected wells (BDC-05-02, BDC-05-03, BDC 05-04, BDC-05-07, and BDC-05-10) to a range of 627–9,629 mg/L in May 2018. As of November 2022, TOC remains greater than 10 mg/L (14.4–237 mg/L) at four of the five wells injected in 2017.

Highly reducing conditions required for reductive dechlorination persist throughout the core of the plume, as indicated by persistently low concentrations of sulfate and elevated concentrations of methane in all injection wells through November 2022. These enhanced redox conditions also continue at six monitoring wells which were not injected. At other downgradient and crossgradient monitoring wells, redox changes were minor (e.g., decreased DO or increased ferrous iron) or short-lived (e.g., a brief decrease in sulfate followed by a rebound to baseline levels) following the two injection events.

3.4.3 Copper and Arsenic

Total and/or dissolved copper concentrations were above the PCUL (0.008 mg/L) at three of 22 wells as of the November 2022 sampling event. These are three of the five wells injected in 2017. A similar increase in copper concentrations was observed at many of the wells injected in 2011, followed by a decrease to below the PCUL.

As of November 2022, total and/or dissolved arsenic concentrations remained above the PCUL (0.008 mg/L) at 15 of 22 sampled wells, compared to 16 of 22 wells above the PCUL in November 2017. Concentrations at these 15 wells have been consistently near or above the PCUL for arsenic since the first injection, except for BDC-05-04, which had been below the PCUL from May 2014 to until November 2017. The highest detections in November 2022 were total and dissolved arsenic results of 0.054 mg/L and 0.056 mg/L, respectively, at BDC-05-14.

Reducing conditions may cause mobilization of naturally occurring arsenic (along with manganese and iron) as a localized and temporary phenomenon within the portion of the aquifer that has been artificially reduced through donor amendment. Once the injected donor has been consumed and natural conditions are re-established, these metals will precipitate as the less soluble forms that existed prior to donor amendment (Solutions-EIS 2006, Suthersan et al. 2003). However, because of elevated natural background concentrations of arsenic commonly observed within the Duwamish area because of

naturally reduced aquifer conditions, arsenic concentrations are not expected to achieve the PCUL at project completion. Final cleanup levels for arsenic and copper will need to consider appropriate background concentrations in accordance with Washington Administrative Code (WAC) 173-340-720 (7)(c).

Time plots for total copper and arsenic are presented for injection wells and monitoring wells in Appendix F.

4.0 SWMU-20

This section describes the IA underway at SWMU-20. A description of the remedial approach and a summary of previous work is provided. IA activities and performance monitoring results are presented for the 2022 reporting period.

4.1 Remedial Approach

IA in SWMU-20 has consisted of groundwater pump-and-treat followed by bioremediation for the treatment of PCE and TCE in groundwater. Anaerobic bioremediation of VOCs like PCE and TCE relies on reductive dechlorination—the microbially mediated process by which these compounds are reduced to transformation products, cDCE and VC, and non-toxic end products, ethene and ethane. Microorganisms gain energy through reductive dechlorination by utilizing PCE, TCE, and breakdown products as electron acceptors and hydrogen as an electron donor. Fermentable substrates like sodium lactate and vegetable oil can serve as sources of electron donor for this process. The reductive dechlorination process is described in more detail in Section 3.1.

Full-scale implementation of anaerobic bioremediation through the addition of fermentable substrates has been successful. Treatment methods and performance results are summarized in the following section. The details of the pump-and-treat system shutdown and indoor air modeling and sampling are also provided in the following section.

4.2 Summary of Prior Work and Findings

Prior to the reporting period, work at SWMU-20 included groundwater pump-and-treat, bioremediation injections, indoor air evaluations and sampling, and performance groundwater monitoring. Five full-scale electron donor injections for bioremediation have been performed to date; all events are detailed in the IAWP (Landau 2019b) and prior annual reports for SWMU-20.

4.2.1 Groundwater Pump and Treat

Following soil and groundwater investigations around the former degreaser location, a groundwater treatment system was installed to remove chlorinated VOCs from groundwater for source area treatment and for the prevention of further contaminant migration. The treatment system, consisting of two extraction wells (E-1 and E-2) 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 evaluation of natural attenuation as a remedial alternative to achieve site PCULs (Landau 2004).

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 (Landau 2002).

The groundwater treatment system in SWMU-20 was decommissioned in June 2014. Ecology agreed that the treatment system was not likely to be needed in the future because of effective bioremediation treatment. 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.

4.2.2 Bioremediation

A series of five bioremediation injection events were performed to address contaminant concentrations near the former degreaser, downgradient, and ultimately at peripheral wells not affected by the earlier injections. Iterative full-scale bioremediation was implemented without pilot testing. These injections are described in detail in the IAWP (Landau 2019b) and summarized below:

- Injection solution containing sodium lactate and vegetable oil emulsion was injected at six monitoring wells (MW-6A, MW-6B, MW-6C, MW-9A, MW-9B, and MW-9C) during the first injection in June 2004 using groundwater from two extraction wells (E-1 and E-2). Post-injection monitoring results indicated that the first injection was successful at establishing more reducing redox conditions and enhancing reductive dechlorination.
- A second injection was performed in December 2004, just 6 months after the first injection to maintain elevated TOC concentrations for continued bioremediation. Four monitoring wells (MW-6A, MW-6B, MW-9A, and MW-9B) were injected with injection solution containing sodium lactate and vegetable oil; the mixture of the two substrates was intended to maximize the extent and longevity of treatment. Groundwater extracted from two extraction wells (E-1 and E-2) was used in the injection solution.
- One monitoring well (MW-14A) was used for the third injection in March 2005. Injection solution containing groundwater from extraction wells (E-1 and E-2), sodium lactate, and vegetable oil was injected at MW-14A only in order to extend the treatment zone downgradient of the source and to treat relatively high concentrations of VC observed at the well following prior injections nearer the source zone. Two additional monitoring wells (MW-22A and MW-23A) were installed to monitor the effects of the third injection and to monitor treatment progress farther downgradient.
- The fourth injection in August 2008 utilized groundwater from two extraction wells (E-1 and E-2) and solution was injected at three monitoring wells (MW-6A, MW-9A, and MW-10A) to provide additional source zone treatment. Injection solution contained sodium lactate and vegetable oil emulsion mixed with groundwater.
- Nine monitoring wells (MW-6A, MW-6B, MW-10C, MW-15C, MW-16A, MW-16C, MW-17A, MW-20C, and MW-22A) were injected during the fifth injection in October and November 2015 to target residual contaminant mass at source zone wells and additional wells located on the fringes of the treatment area. Injection solution contained sodium lactate mixed with tap water.

4.2.3 Groundwater Monitoring

Quarterly to semiannual monitoring began in January 1994. After reviewing long-term monitoring data at SWMU-20 wells, sampling reductions were proposed in April 2010 and again in March 2015. The 2010 sampling reduction discontinued semiannual monitoring at 11 of the 29 existing SWMU-20 monitoring

wells, where VOCs of concern (PCE, TCE, cDCE, and VC) had been below reporting limits for 2 years or more (Landau 2010a). Ecology approved additional sampling reduction in 2015, which discontinued semiannual monitoring at four of the 18 sampled wells.[4] 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 PCUL in May 2014 or were of continued interest for Ecology. Semiannual monitoring at these 14 wells will continue during 2023 to evaluate ongoing monitored natural attenuation (MNA) in SWMU-20 (Landau 2015a, b). Wells not included in the current monitoring program have not yet been decommissioned.

4.2.4 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, a manufacturing building which overlies the source, and Building 9-90, an office building located hydraulically downgradient of the source (Figure 3). The model concluded that the associated risk levels for occupational inhalation of potentially impacted indoor air were at, or below, the regulatory criteria (Landau 2005a).

Further evaluation of indoor air followed increased VC concentrations in groundwater at MW-14A in October 2004 (Landau 2005a). 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 resulted in indoor air sampling in Building 9-90 (Landau 2005b).

Three indoor air samples were collected in January 2006 in the north portion of Building 9-90 and along the estimated axis of the VOC groundwater plume in order to characterize potential vapor intrusion. This sampling event occurred as the result of VC concentrations increasing as high as 1,000 µg/L at upgradient well MW-14A as a result of source zone bioremediation. 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 cleanup levels (Landau 2006b).

[4] Ecology approved discontinued sampling at four of 18 sampled wells and not nine, as previously stated (Landau 2019b). This section has been updated to reflect that sampling is performed at 14 wells in SWMU-20. The correct number of wells has been sampled for SWMU-20 since the 2015 sampling reduction.

4.3 2022 Activities

Activities in 2022 consisted of two semiannual performance monitoring events at 14 wells in SWMU-20 to evaluate the progress of MNA following the bioremediation injection in 2015. No injections were performed in 2022.

All samples collected during monitoring events were analyzed for VOCs and several aquifer redox parameters (DO, ORP, and pH). Four wells (MW-6A, MW-6B, MW-9A, and MW-22A) were also analyzed for parameters indicative of MNA performance (methane, ethane, ethene, TOC, and sulfate). Laboratory analysis for VOCs, methane, ethane, ethene, TOC, and sulfate was performed by ARLLC in Tukwila, Washington. Aquifer redox parameters DO, ORP, and pH were measured in the field.

Groundwater elevations were measured during the May and November 2022 semiannual sampling events. Consistent with previous measurements, groundwater flow is generally to the west-southwest. These groundwater flow directions are consistent with the alignment of the contaminant plume. Groundwater elevation contours for May and November 2022 are presented on Figures 4 and 5, respectively. Cumulative groundwater elevations for SWMU-20 wells are presented in Appendix B.

4.4 2022 Results and Discussion

Groundwater monitoring data for wells in the source zone and non-source zone are summarized in Tables 4 and 5, respectively. Results for PCE, TCE, and breakdown products are also presented on Figures 12 through 15, with detections highlighted. Contaminant concentration trend charts are presented in Appendix G. Laboratory reports for analytical results are presented in Appendix A. Cumulative groundwater elevation data for SWMU-20 wells are presented in Appendix B.

Groundwater monitoring results indicate concentrations of PCE, TCE, and breakdown products were below the PCULs at all SWMU-20 monitoring wells except one (MW-13A) in November 2022. TCE was detected at a concentration of 1.74 µg/L, which is slightly above the 1.4 µg/L PCUL. As shown in Table 4, November 2021 detections of cDCE (378 µg/L) and VC (949 µg/L) at MW-9A exceeded the proposed CULs, while cDCE was not detected in MW-09A in 2022. These substantial concentration increases in 2021 were preceded by smaller increases in cDCE and VC in November 2020 and May 2021. Ethene+ethane was also elevated in November 2021 (658 µg/L), and the 2022 groundwater sampling confirmed complete reductive dechlorination to these non-toxic end products.

The cause of the previously observed increased cDCE and VC concentrations at MW-9A remains unknown. The increases in May and November 2021 were preceded by direct-push drilling performed in March 2021 for collection of RI soil and groundwater samples; boring RISB-11 was located within 15 ft of MW-09A. It is possible that the agitation associated with percussion drilling and soil sampling resulted in enhanced desorption of contaminant mass now detected at MW-9A. Future groundwater sampling results may shed light on the cause of the previously observed concentration increases. Results for 2022 indicate that aquifer redox conditions remain conducive to continued bioremediation following the fifth electron donor injection in SWMU-20 in October and November 2015 (Landau 2019b). Sulfate-reducing

to methanogenic aquifer conditions and ethene/ethane production continue at most wells. Additional electron donor injection is not planned at this time.

Naphthalene has been detected in samples collected during regular groundwater monitoring since 1996. Cumulative results are presented in Table 6 and on Figure 16. While recent naphthalene detections are comparable to historically low concentrations, a substantial increase was observed at monitoring well MW-22A starting in October 2015. Concentrations peaked in May 2019 and immediately declined to, and have remained at, historic lows since May 2021. Naphthalene has also been prevalent at MW-9A, where elevated concentrations are detected during most November groundwater sampling events. Semiannual groundwater monitoring for naphthalene continues at 14 wells in and near SWMU-20.

5.0 PLANNED ACTIONS AND SCHEDULE

Planned actions for 2023 related to groundwater monitoring consist of two site-wide semiannual (May and November) monitoring events and reporting. Site-wide monitoring will be conducted in accordance with the sampling matrix presented in the IAWP (Landau 2019b) with minor modifications (Table 7).[5] Monitoring locations are presented on Figure 17.

An additional nitrate injection will be conducted in AOC-05 in accordance with the November 2007 *AOC-05 Remedial Action Plan* (Landau 2007b) and subsequent September 2009 *Update on AOC-05 Full-Scale Bioremediation Results* (Landau 2009).

Reporting will consist of monthly site-wide progress reports and one site-wide annual groundwater monitoring report submitted in early 2024. Boeing will present sampling data, once validated, with select tables and figures as an attachment to a monthly progress report. A brief discussion of semiannual sampling results is included in the body of the monthly progress report, if necessary. The 2023 annual groundwater monitoring report will include a summary of the February 2023 nitrate injection in AOC-05.

2023	PLANNED ACTIVITY
January	Monthly Progress Report with November 2022 Groundwater Results Summary
February	AOC-05 Nitrate Injection Monthly Progress Report
April	Monthly Progress Report
May	Semiannual Groundwater Sampling Monthly Progress Report 2023 Annual Groundwater Monitoring Report
June	Monthly Progress Report with May 2023 Groundwater Results Summary
July	Monthly Progress Report
August	Monthly Progress Report
September	Monthly Progress Report
October	Monthly Progress Report
November	Semiannual Groundwater Sampling Monthly Progress Report
December	Monthly Progress Report

[5] Due to the recent VC detections at BDC-05-22 in SWMU-17, it is recommended that AMEE analysis be added at this well until further notice to ensure that complete reductive dechlorination is occurring.

6.0 USE OF THIS REPORT

This annual evaluation report has been prepared for the exclusive use of The Boeing Company for specific application to the Developmental Center site 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 Landau. 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 Landau, shall be at the user's sole risk. Landau 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. Landau makes no other warranty, either express or implied.

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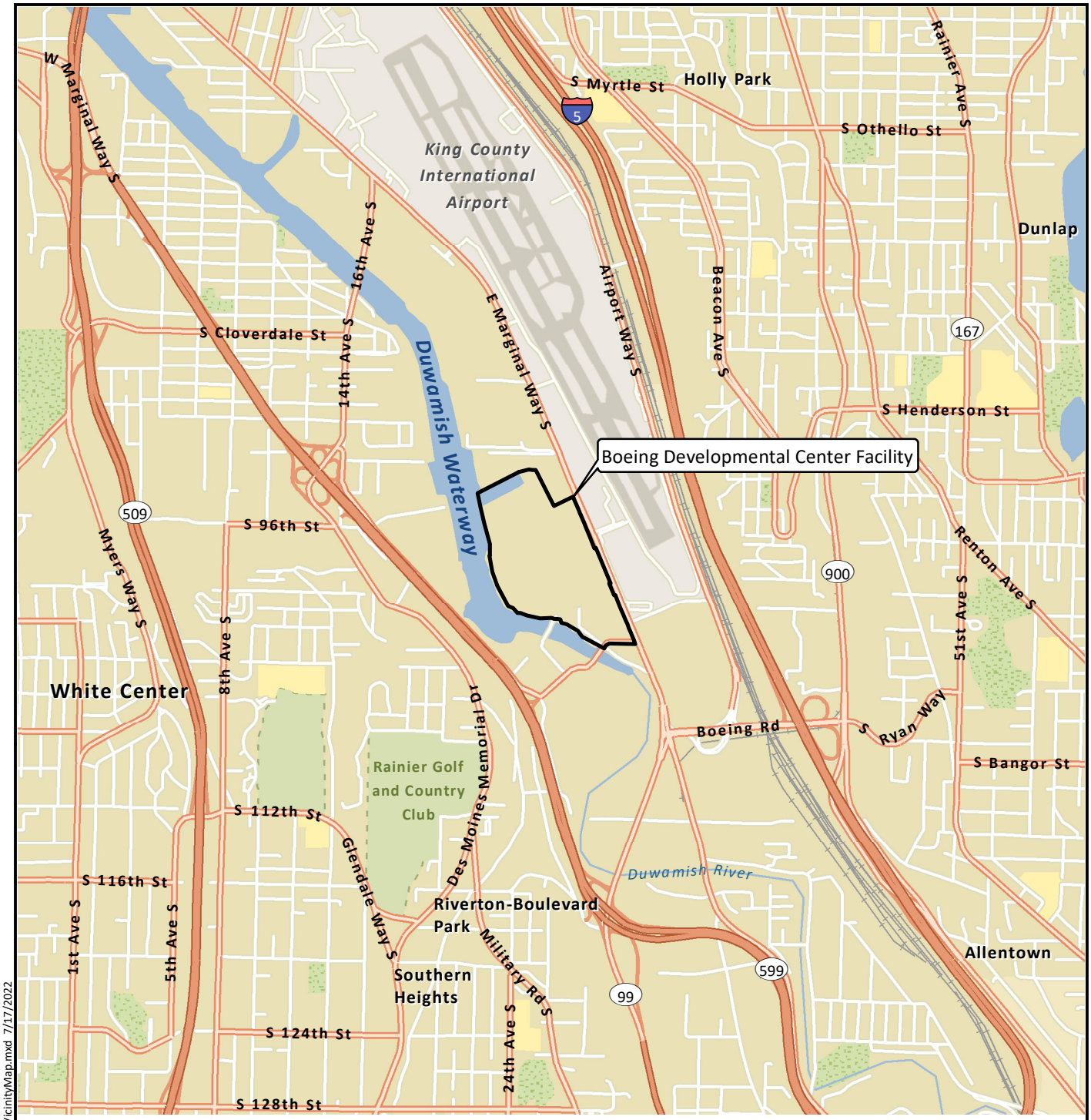

N

0 0.5 1

Miles

Data Source: Esri.

G:\Projects\025\093\122\023\Phase I RI Data Report\F01VicinityMap.mxd 7/17/2022

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

G:\Projects\025\093\122\023\Phase I RI Data Report\F02FacilityMap.mxd 7/17/2022

Legend

Facility Boundary

0 300 600

Scale in Feet

Note

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

Data Sources: Boeing; King County GIS.

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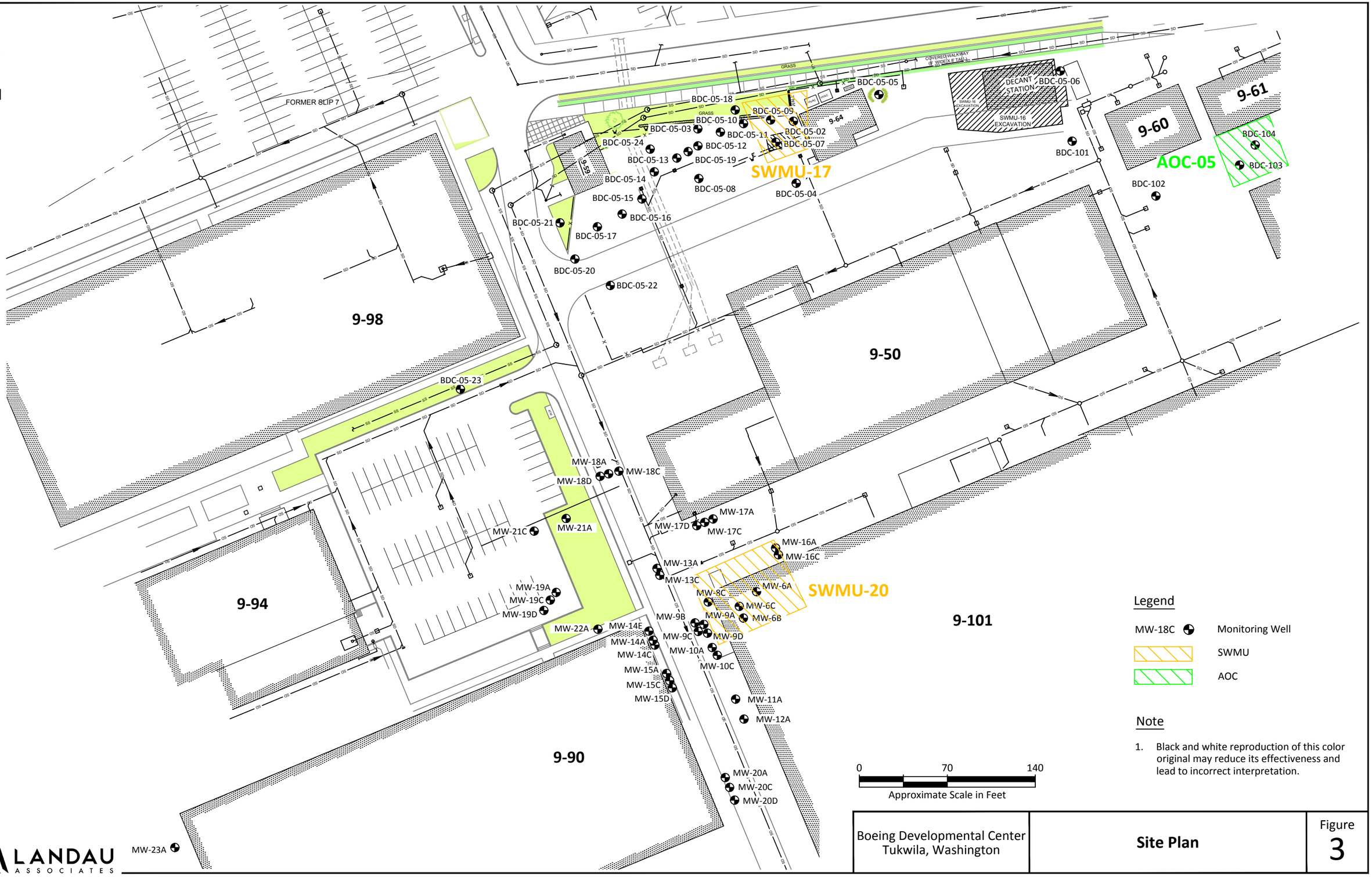
Boeing Developmental Center Tukwila, Washington	**Facility Boundary**	Figure 2



Legend

- MW-18C — Monitoring Well
- SWMU
- AOC

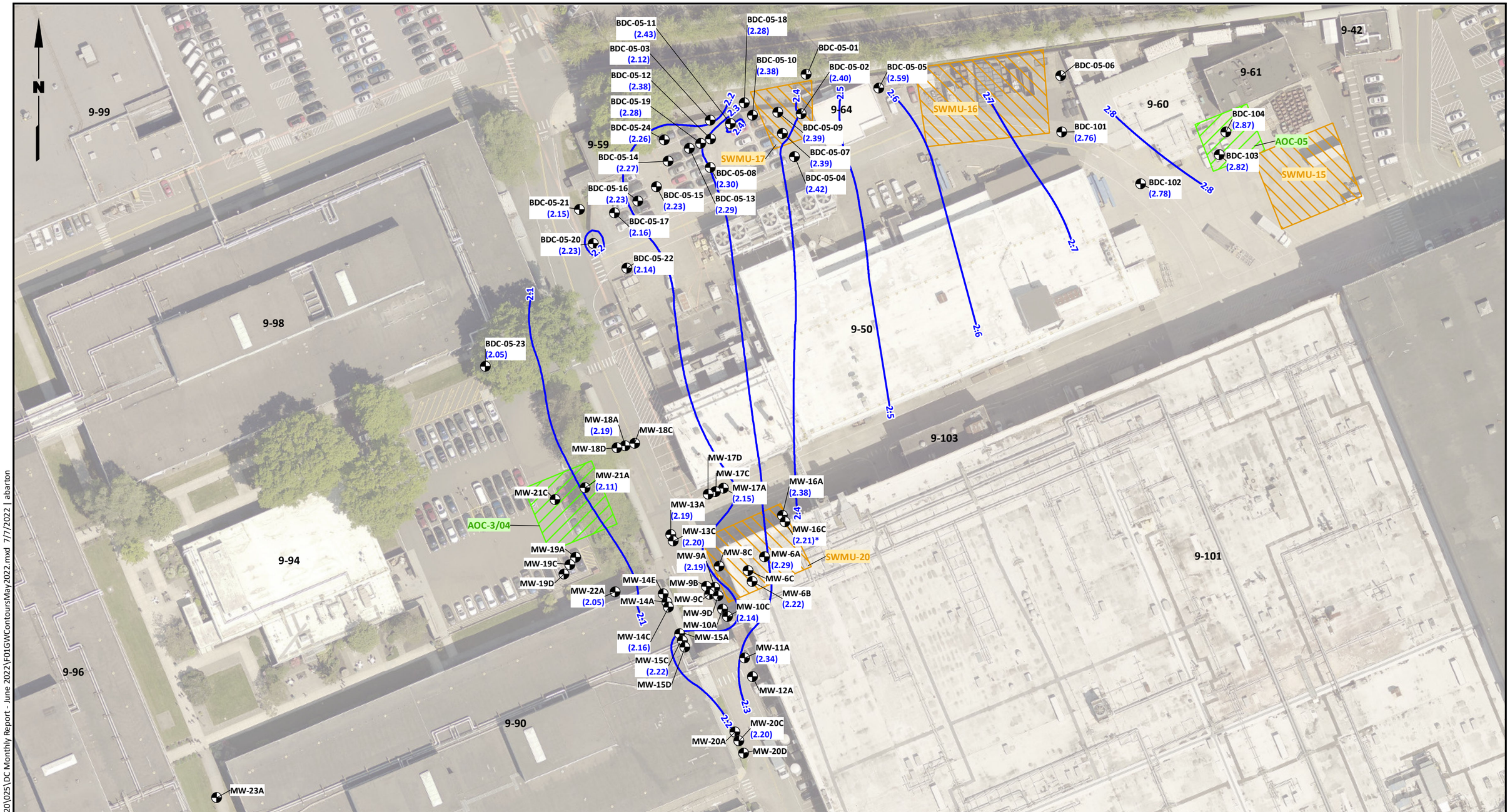
Note

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

Boeing Developmental Center Tukwila, Washington	**Site Plan**	Figure 3

LANDAU ASSOCIATES

Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F03SitePlan.dwg | 3/31/2022 12:44 PM | ezick



G:\Projects\025\093\120\025\DC Monthly Report - June 2022\F01GWContoursMay2022.mxd 7/7/2022 | abarton

Legend

- Monitoring Well
- Groundwater Contour
- SWMUs
- AOCs

Notes

1. Contours based primarily on A-Zone wells.
2. *Anomalous groundwater not used.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Sources: Boeing; King County GIS.

0 80 160

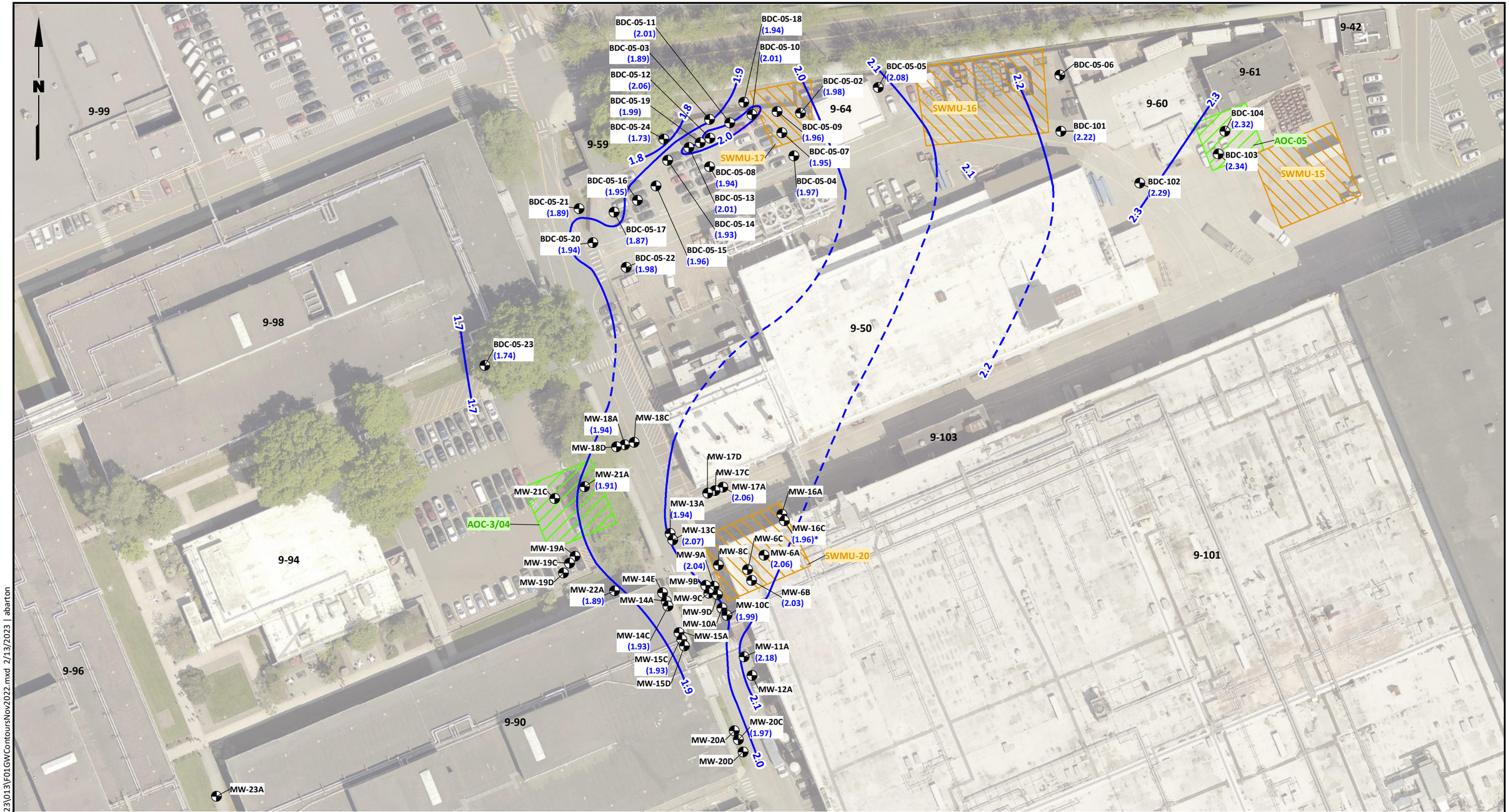
Scale in Feet

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

Groundwater Elevation Contours - May 2022

Figure 4



G:\Projects\025\093\123\013\F01GWContoursNov2022.mxd 2/13/2023 | abarton

Legend

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

Notes

1. Contours based primarily on A-Zone wells.
2. *Anomalous groundwater not used.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 80 160

Scale in Feet

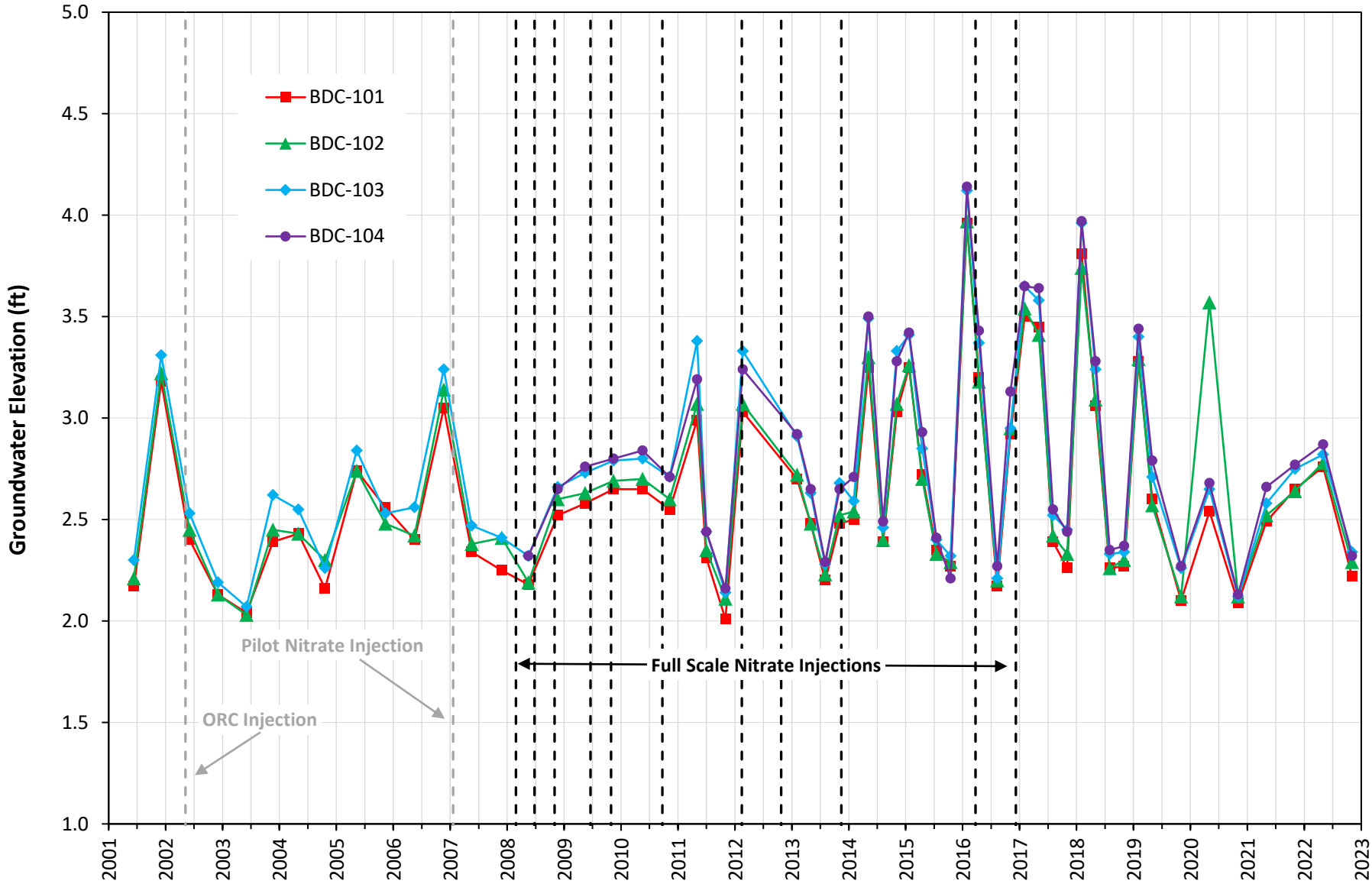
Data Sources: Boeing; King County GIS.

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

Groundwater Elevation Contours - November 2022

Figure 5



Datum = **NGVD29**

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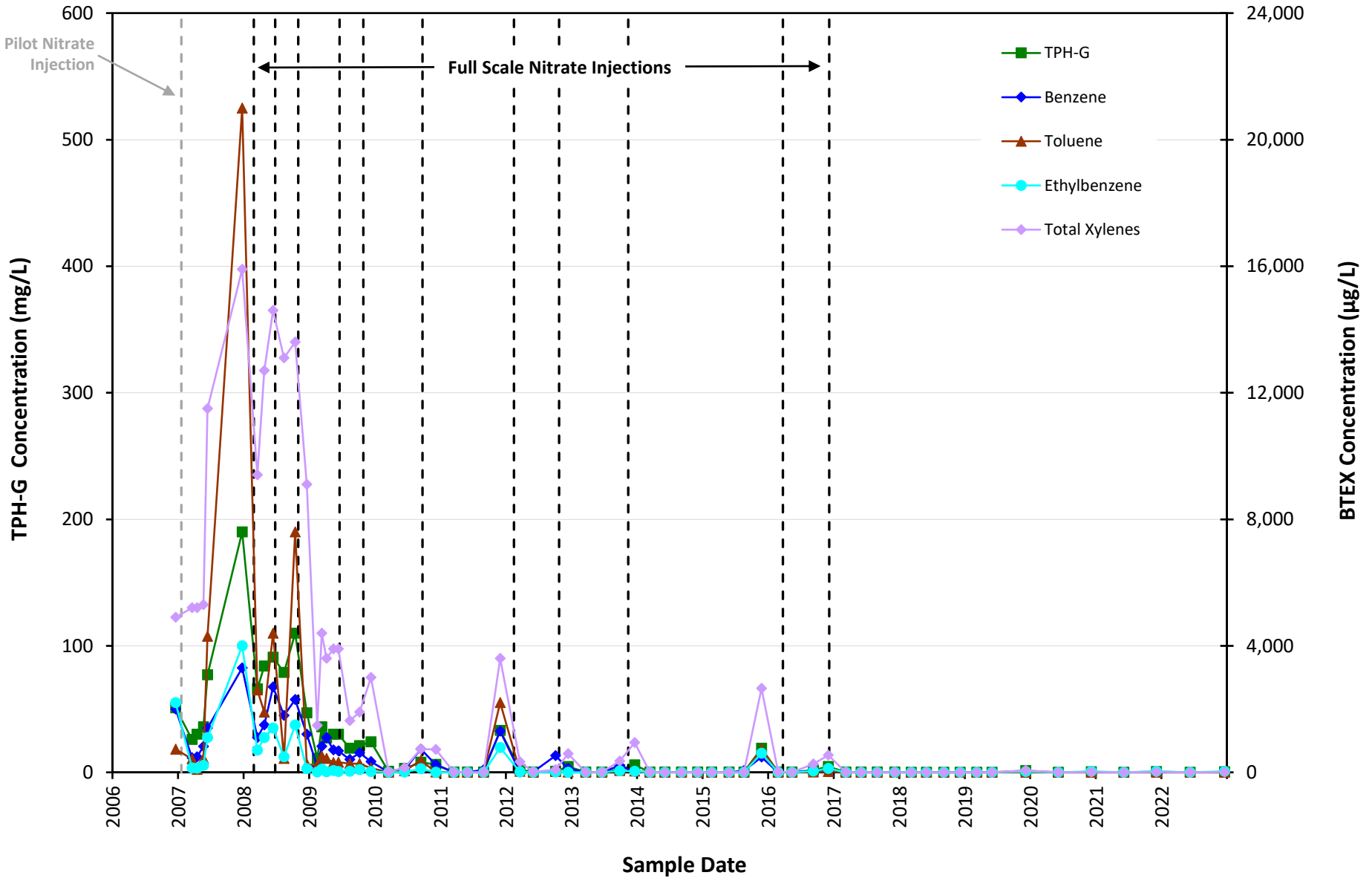
Boeing Developmental Center
Tukwila, Washington

AOC-05: Groundwater Elevations

Figure
6



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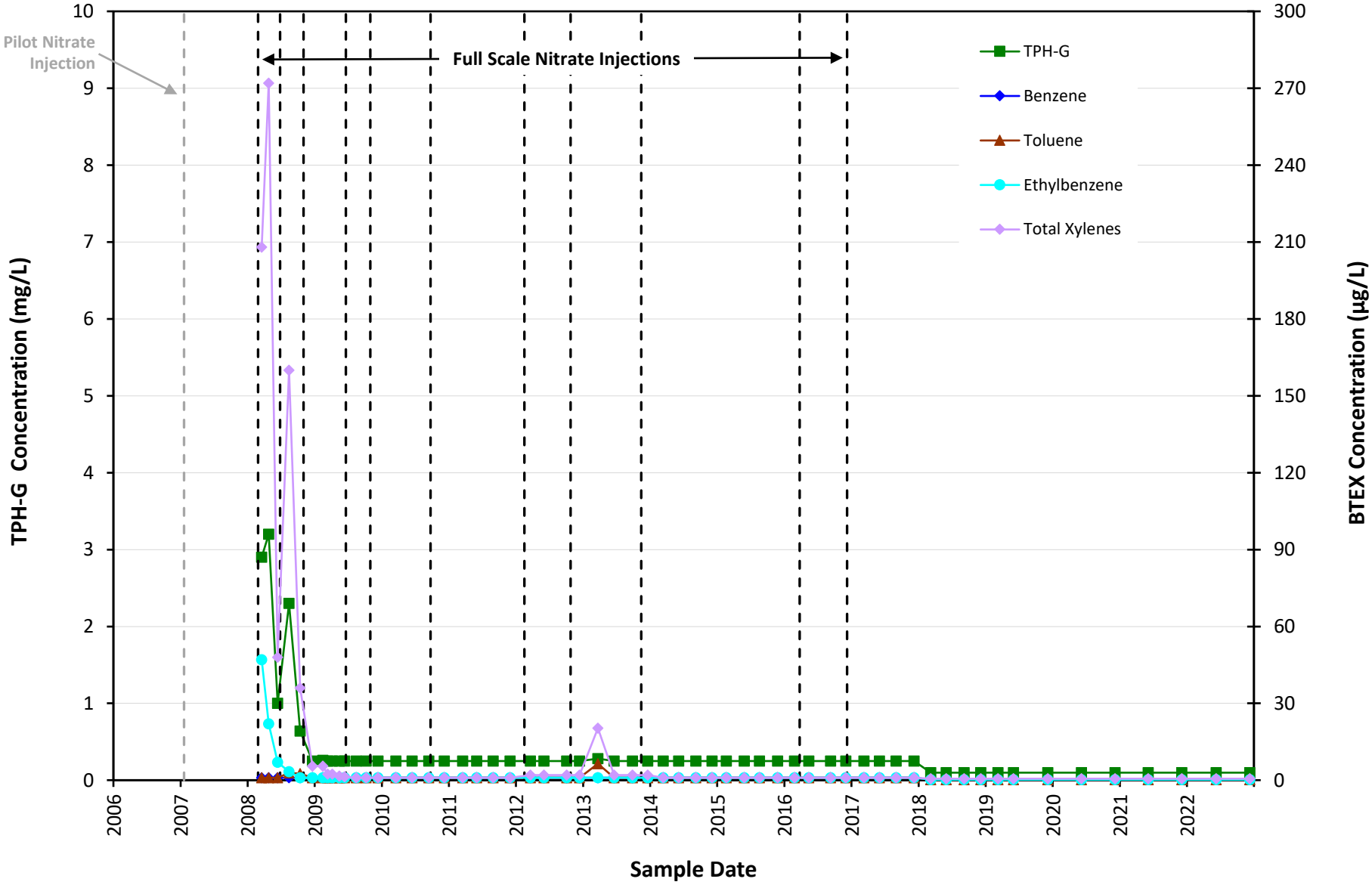
Boeing Developmental Center
Tukwila, Washington

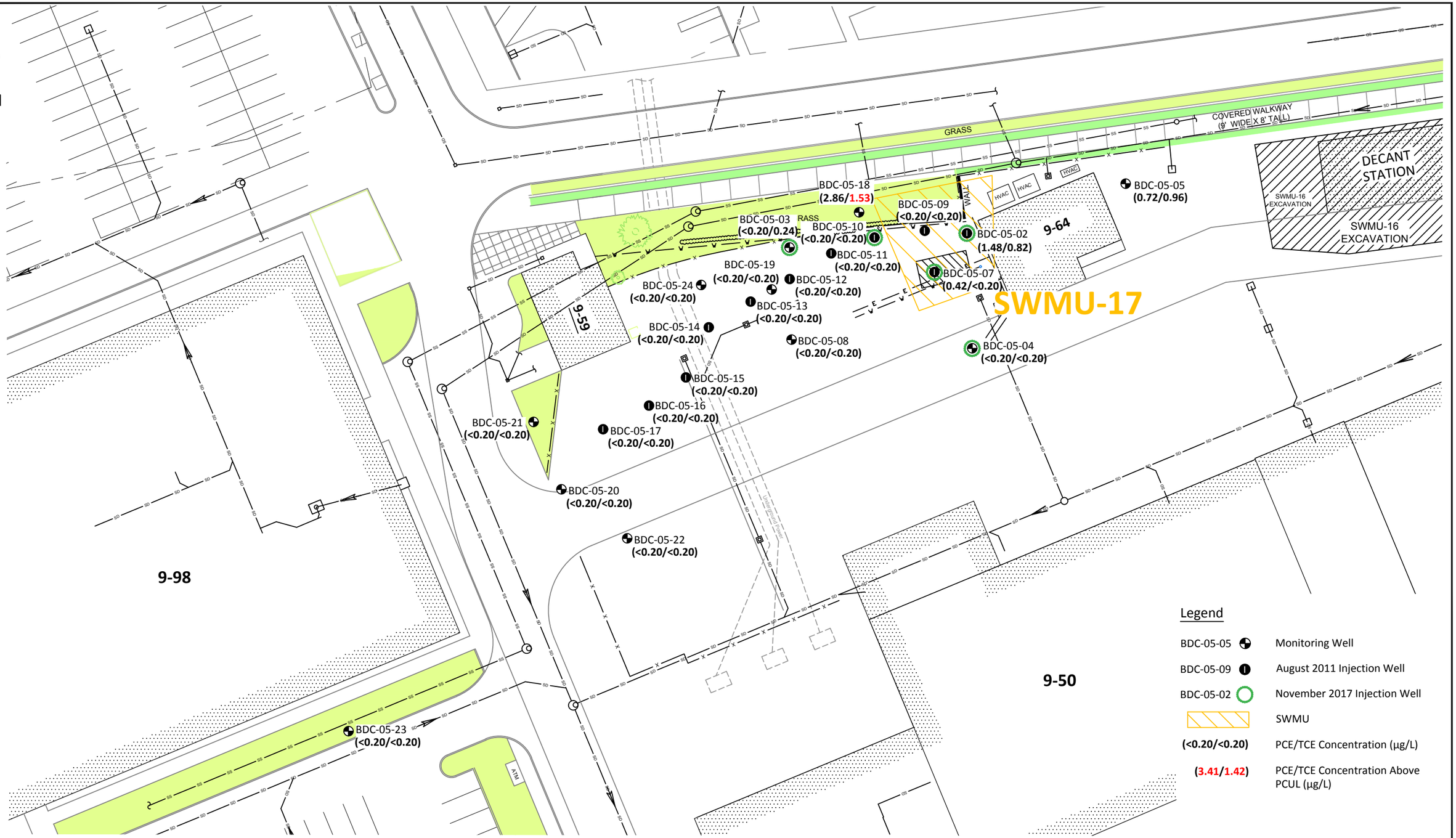
AOC-05: BDC-103 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing

Figure
7



LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**AOC-05: BDC-104 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing**	Figure 8



Notes

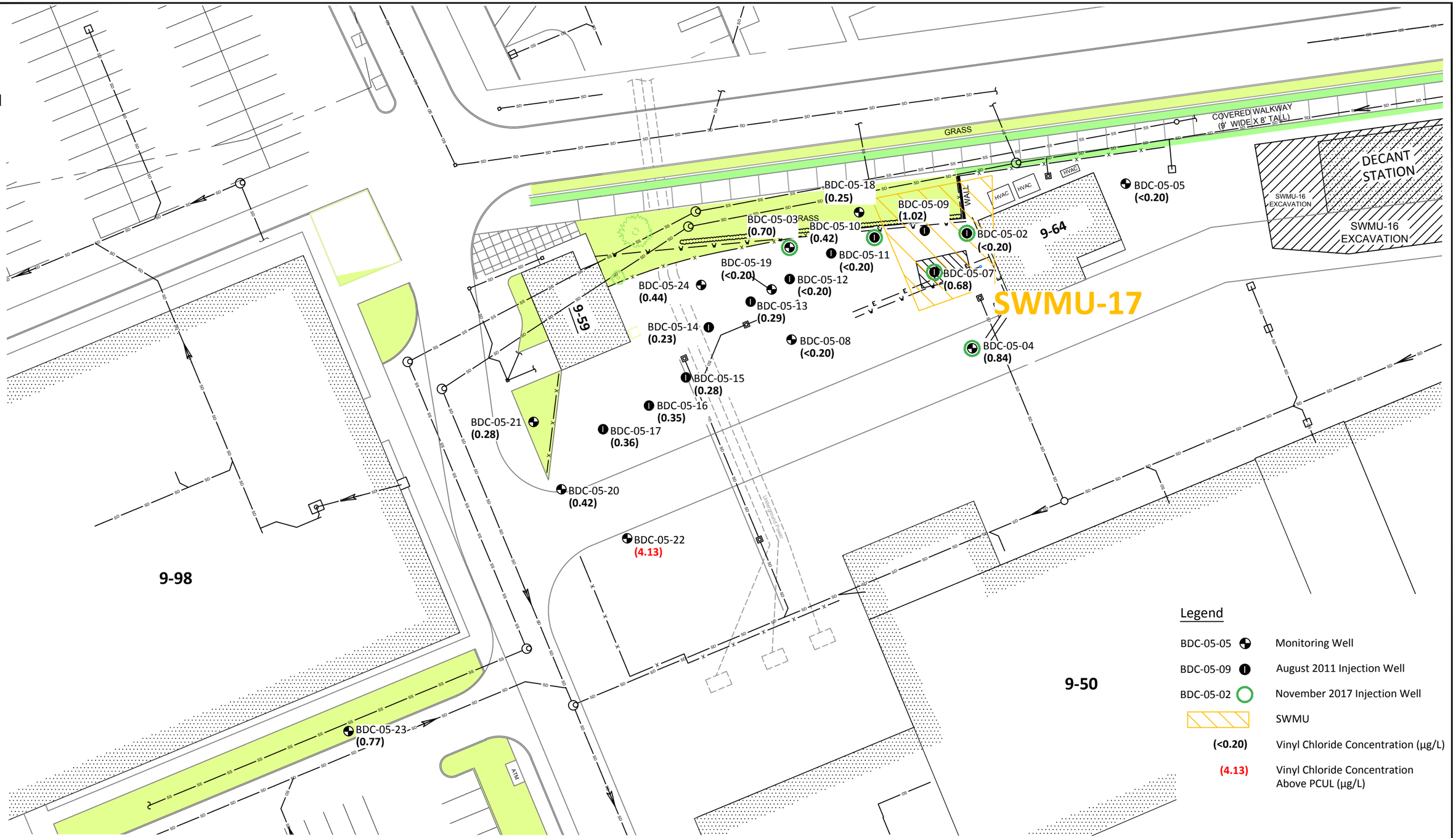
1. The proposed cleanup levels (PCULs) for tetrachloroethene (PCE) and trichloroethylene (TCE) are 5.3 and 1.4 µg/L respectively.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 40 80
Approximate Scale in Feet

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**PCE / TCE in Groundwater November 2022**	Figure 9

Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F09-F10 PCT-TCE-VC November2020.dwg | 1/27/2022 9:34 PM | ezick



Note

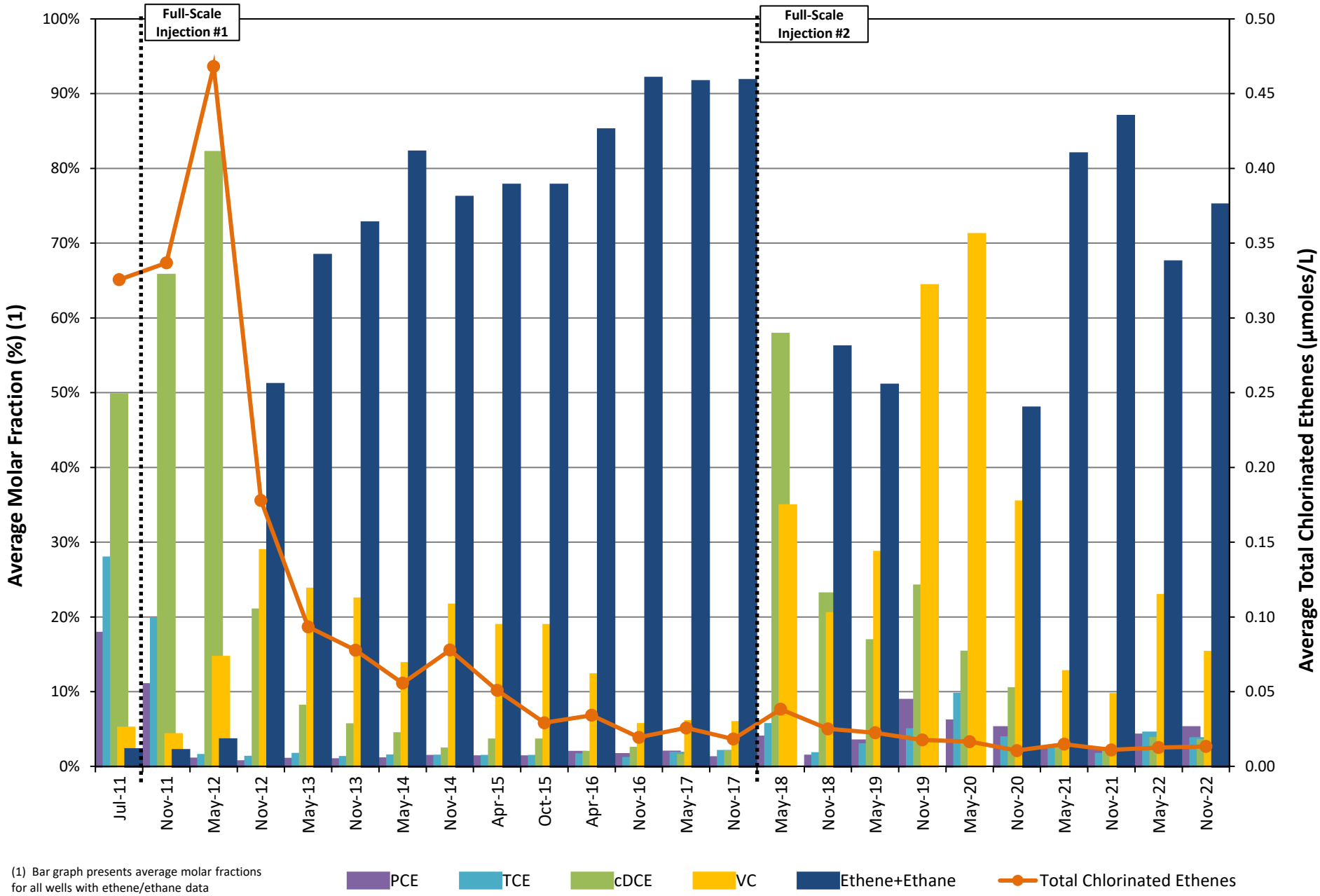
1. The proposed cleanup level (PCUL) for vinyl chloride (VC) is 2.4 µg/L.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 40 80
Approximate Scale in Feet

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Vinyl Chloride in Groundwater November 2022**	Figure 10

Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F09-F10 PCT-TCE-VC November2020.dwg | 1/27/2022 9:34 PM | ezick



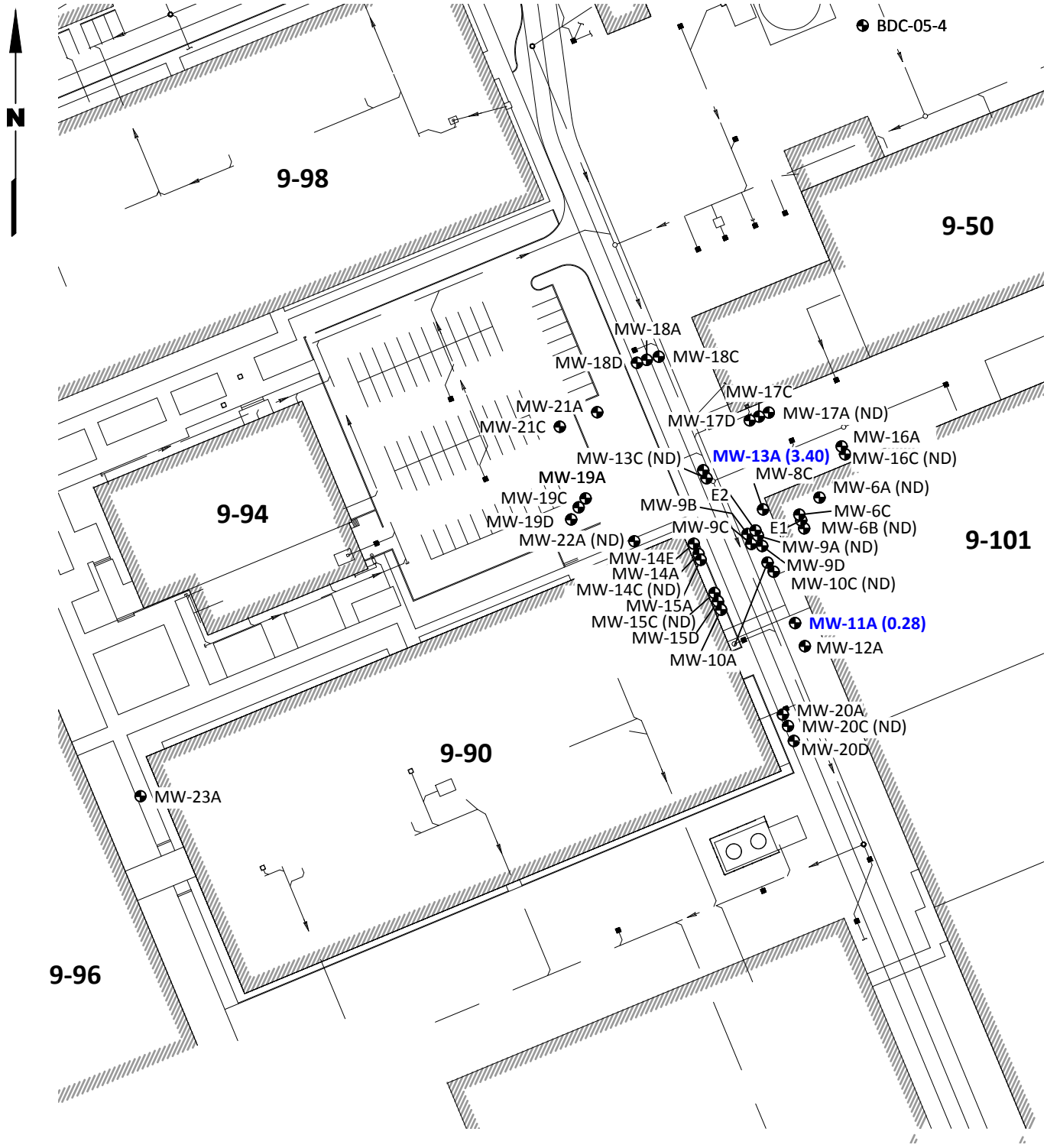
(1) Bar graph presents average molar fractions for all wells with ethene/ethane data

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-17: Average Molar Fraction and Average Chlorinated Ethenes

Figure
11



Legend

- ⊕ Monitoring Well Location
- (ND) Tetrachloroethene (PCE) Not Detected above 0.2 µg/L Detection Limit
- **(1.1)** Tetrachloroethene (PCE) Groundwater Concentration in µg/L

Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F12-15 SWMU-20.dwg | 1/27/2022 10:23 PM | ezick

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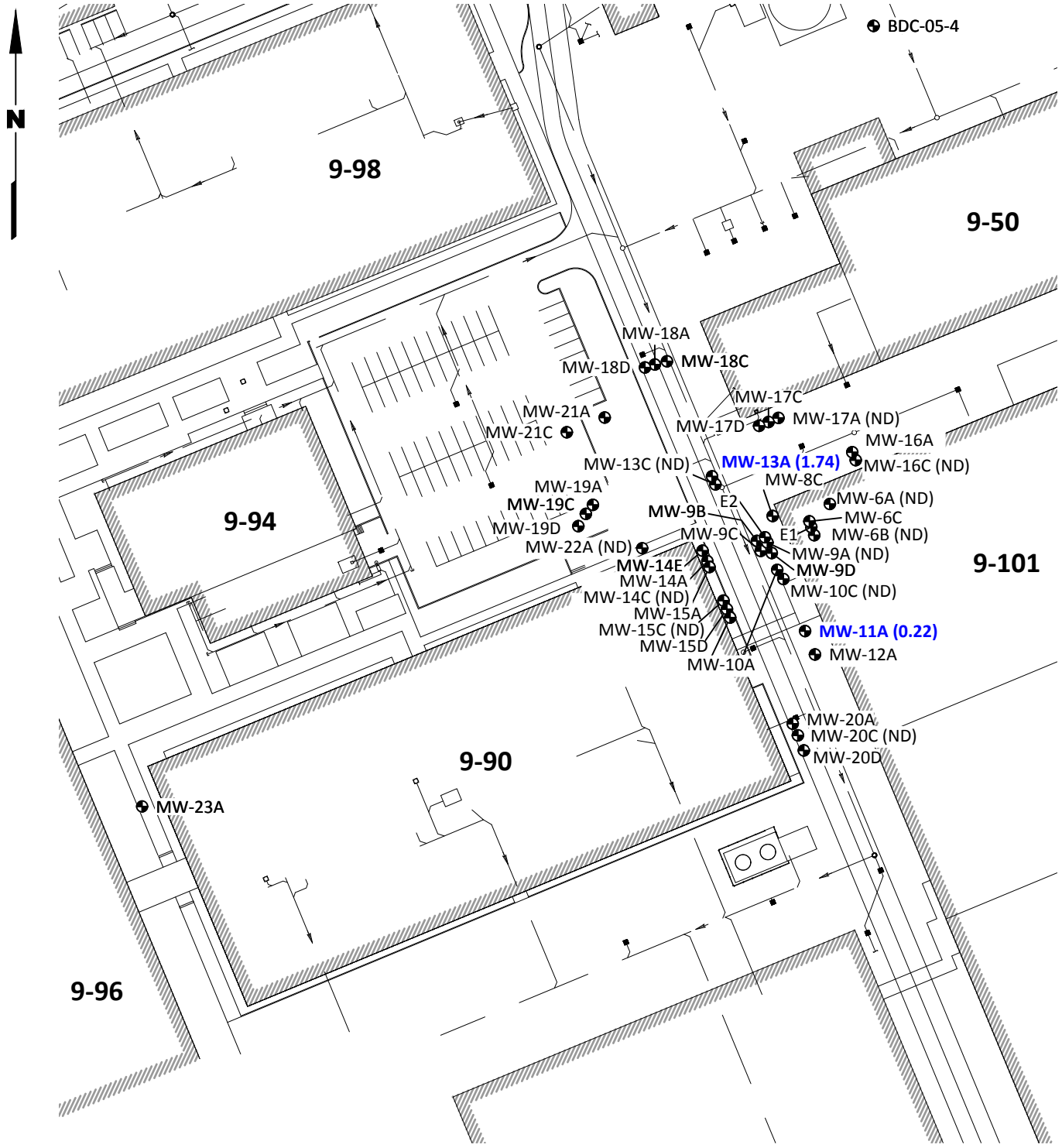
Boeing Developmental Center
Tukwila, Washington

SWMU-20 PCE
November 2022
Groundwater Concentrations

Figure
12



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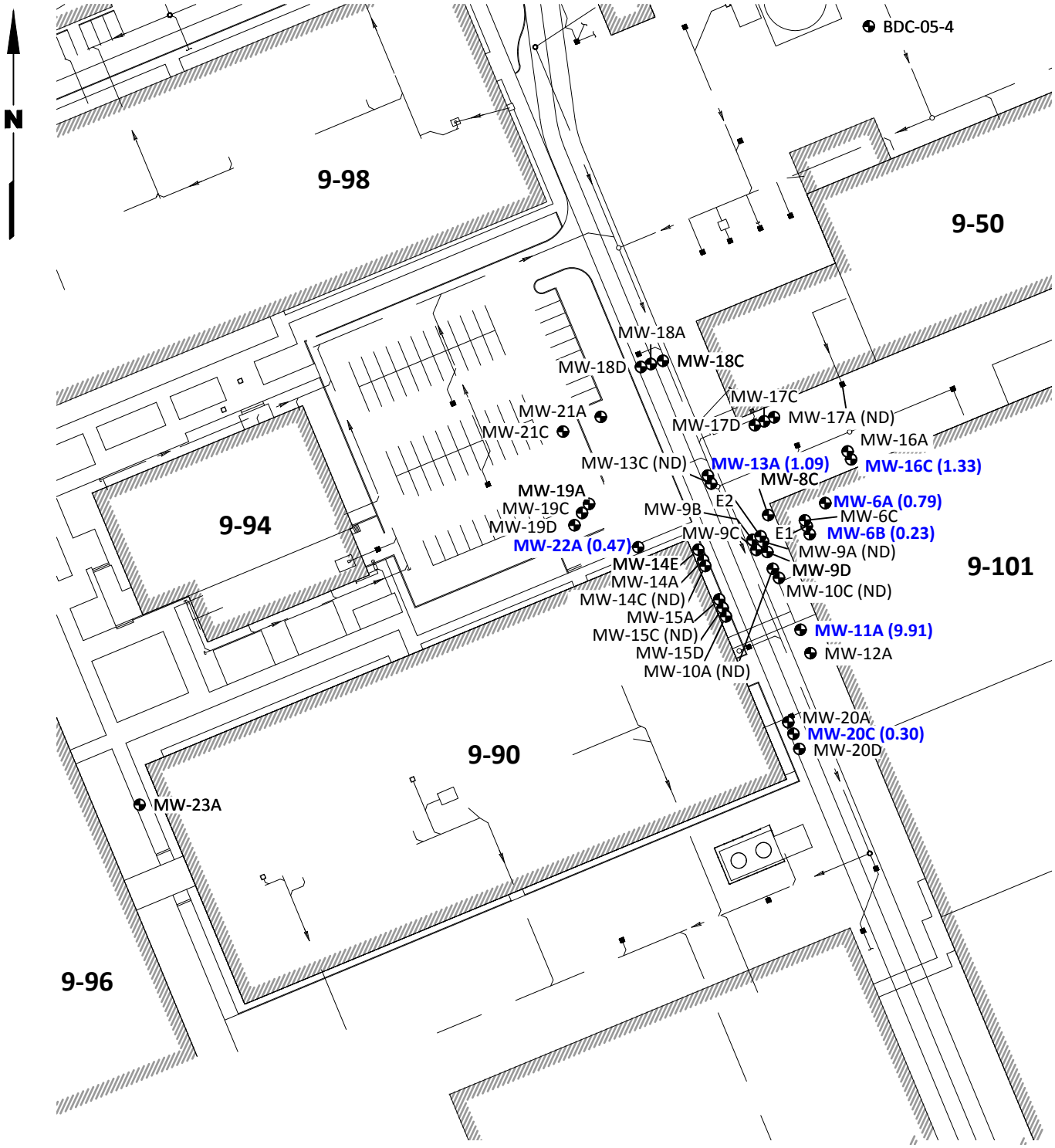
Boeing Developmental Center Tukwila, Washington	**SWMU-20 TCE November 2022 Groundwater Concentrations**	Figure 13



Legend

- Monitoring Well Location
- (ND) Cis-1,2-Dichloroethene (cDCE) Not Detected above 0.2 µg/L Detection Limit
- (9.19) Cis-1,2-Dichloroethene (cDCE) Groundwater Concentration in µg/L

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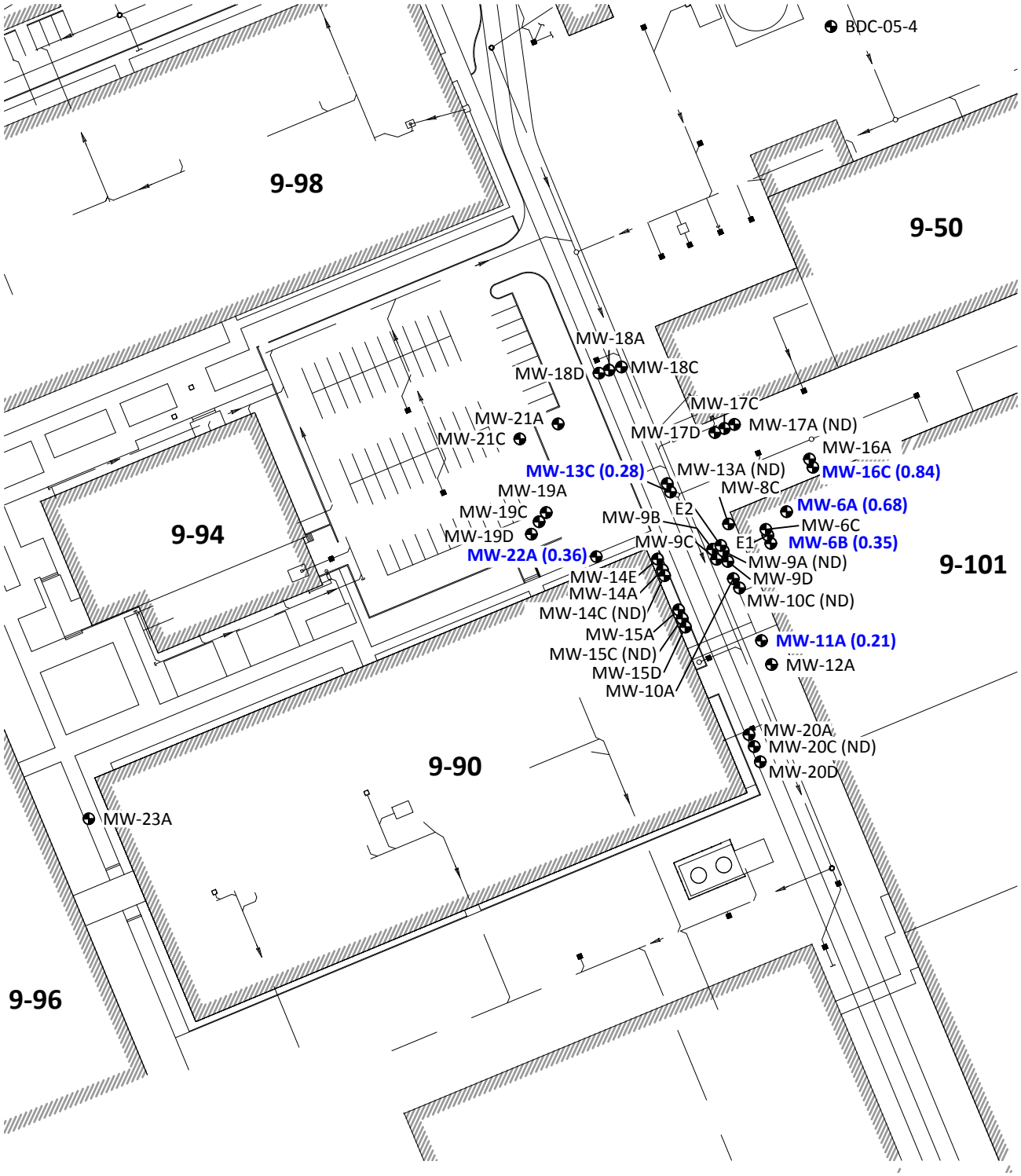
Boeing Developmental Center Tukwila, Washington	**SWMU-20 cDCE November 2022 Groundwater Concentrations**	Figure 14



Legend

⊕	Monitoring Well Location
(ND)	Vinyl Chloride (VC) Not Detected above 0.2 µg/L Detection Limit
(0.21)	Vinyl Chloride (VC) Groundwater Concentration in µg/L

Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F12-15 SWMU-20.dwg | 1/27/2022 10:16 PM | ezick

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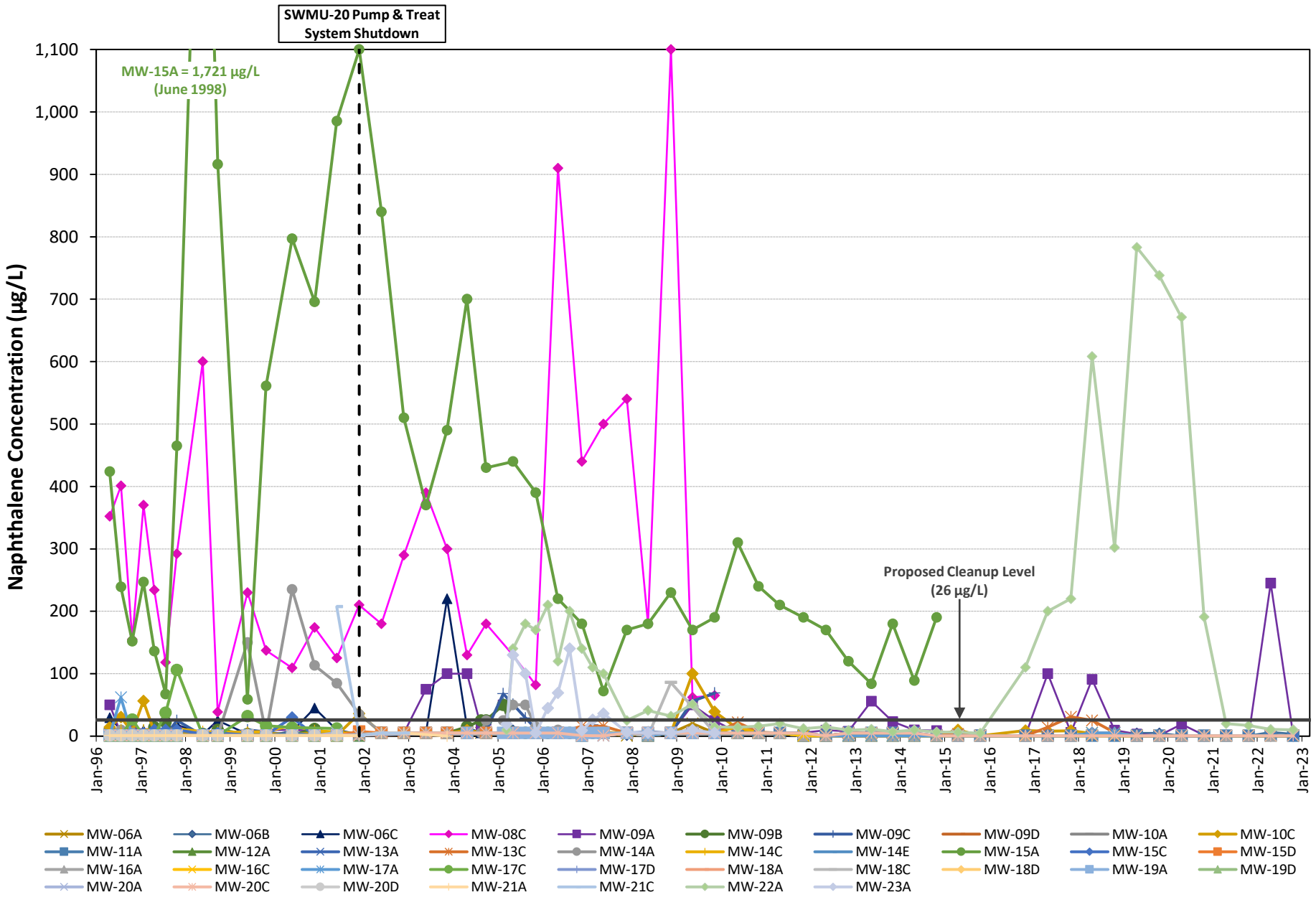
Boeing Developmental Center
Tukwila, Washington

SWMU-20 VC
November 2022
Groundwater Concentrations

Figure
15



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Boeing Developmental Center
Tukwila, Washington

SWMU-20: Naphthalene Concentrations at All Wells

Figure
16

N

9-98

9-94

9-90

9-50

9-101

9-64

9-59

9-60

9-61

SWMU-17

SWMU-20

AOC-05

DECANT STATION

SWMU-16 EXCAVATION

COVERED WALKWAY 10' WIDE X TALL

GRASS

BDC-05-01
BDC-05-02
BDC-05-03
BDC-05-04
BDC-05-05
BDC-05-06
BDC-05-07
BDC-05-08
BDC-05-09
BDC-05-10
BDC-05-11
BDC-05-12
BDC-05-13
BDC-05-14
BDC-05-15
BDC-05-16
BDC-05-17
BDC-05-18
BDC-05-19
BDC-05-20
BDC-05-21
BDC-05-22
BDC-05-23
BDC-05-24
BDC-101
BDC-102
BDC-103
BDC-104

MW-6A
MW-6B
MW-6C
MW-8C
MW-9A
MW-9B
MW-9C
MW-9D
MW-10A
MW-10C
MW-11A
MW-12A
MW-13A
MW-13C
MW-14A
MW-14C
MW-14E
MW-15A
MW-15C
MW-15D
MW-16A
MW-16C
MW-17A
MW-17C
MW-17D
MW-18A
MW-18C
MW-18D
MW-19A
MW-19C
MW-19D
MW-20A
MW-20C
MW-20D
MW-21A
MW-21C
MW-22A
MW-23A

0 70 140

Approximate Scale in Feet

Legend

- MW-18C — Monitoring Well
- MW-11A — Monitoring Well Sampled Semi-Annually (May/Nov)
- SWMU
- AOC

Note

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

Boeing Developmental Center Tukwila, Washington	**Performance Monitoring Locations**	Figure 17

LANDAU ASSOCIATES

Landau Associates | G:\Projects\025\093\120\025\DC 2021 Annual Report\F16PerformanceMonitoringLocations.dwg | 3/31/2022 12:55 PM | ezick

Table 1
AOC-05 Cleanup Action Data Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)													Volatile Organic Compounds							Aquifer Redox Conditions							Donor Indicators	
Well	Date	ORC Injection	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	Full-Scale Injection #3	Full-Scale Injection #4	Full-Scale Injection #5	Full-Scale Injection #6	Full-Scale Injection #7	Full-Scale Injection #8	Full-Scale Injection #9	Full-Scale Injection #10	Full-Scale Injection #11	TPH-G (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)	Total Xylenes (µg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Nitrite-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	ORP (mV)	TOC (mg/L)	pH
		Proposed Groundwater Cleanup Levels (a):													0.8	2.0	1294	1.7	---	---	1546	---	---	---	---	---	---	---	---	---
BDC-101	6/11/2001														3.0	11.9	<1.0	113.1			109.2									
BDC-101	9/4/2001														5.0	7.13	10.7	50.4			53.8									
BDC-101	12/3/2001														6.5	95	1.6	750			650									
BDC-101	3/13/2002														<0.25	1.4	<1.0	4.4			<1.0									
BDC-101	4/29/2002	-8													<0.25	<1.0	<1.0	2.2	<1.0	<1.0	<1.0									
BDC-101	6/3/2002	27													<0.25	1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-101	7/1/2002	55													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-101	8/1/2002	86													<0.25	3.1	<1.0	2.4	<1.0	<1.0	<1.0									
BDC-101	12/2/2002	209													0.61	4.3	<1.0	21	27	6.4	33.4									
BDC-101	3/10/2003	307													<0.25	1.0	<1.0	4.5	3.2	<1.0	3.2									
BDC-101	6/3/2003	392													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-101	11/19/2003	561													0.42	13	<1.0	15	35	<1.0	35	0.36	1.1	0.010	0.2	16	240	120.3		
BDC-101	4/28/2004	722													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-101	10/18/2004	895													0.64	10	<1.0	15	43	<1.0	43									
BDC-101	5/10/2005	1,099													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-101	11/10/2005	1,283													0.25	7.6	<1.0	2.6	42	<1.0	42	0.96	4.4			34.3		259	2.05	
BDC-101	5/15/2006	1,469													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.78	17.8	0.059	0.0	64.1		80		
BDC-101	11/20/2006	1,658	-59												1.1	10	<1.0	15	72.0	<1.0	72	0.92	0.122	0.016	2.4	8.7		174		
BDC-101	2/20/2007	1,750	33												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.39	15.0	0.047	0.2	50.0		277		6.63
BDC-101	3/19/2007	1,777	60												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.97	8.83	0.037	0.5	38.5		213		6.60
BDC-101	4/24/2007	1,813	96												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.09	9.59	0.041	0.5	34.1		136		6.46
BDC-101	5/17/2007	1,836	119												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.35	9.95	0.046	0.4	35.7		297		6.55
BDC-101	11/26/2007	2,029	312												<0.25	<1.0	<1.0	2.1	6.5	<1.0	6.5	2.30	5.88	0.032	0.0	26.8		287		
BDC-101	2/18/2008	2,113	396	-8											<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.55	8.10	0.040	0.0	31.5		341		6.29
BDC-101	3/27/2008	2,151	434	30											<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.19	9.3	<0.10	0.2	40.0		506		
BDC-101	5/15/2008	2,200	483	79	-40										<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.57	6.8	<0.10	0.0	24.6		176		6.44
BDC-101	7/16/2008	2,262	545	141	22										<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.34	5.3	<0.10	0.0	21.8		-232		6.52
BDC-101	9/15/2008	2,323	606	202	83	-45									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.22	5.33	0.023	0.0	28.7		153		
BDC-101	11/20/2008	2,389	672	268	149	21									0.44	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	1.45	2.9	0.1	0.8	17.1		-22		6.65
BDC-101	1/16/2009	2,446	729	325	206	78									<0.25	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	0	4.40	0.042	0.4	29.5		-245		6.50
BDC-101	2/11/2009	2,472	755	351	232	104									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.62	8.5	<0.1	0.4	39.6		-16		6.43
BDC-101	3/9/2009	2,498	781	377	258	130									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.93	9.4	<0.1	0.0	46.8		54		6.54
BDC-101	4/16/2009	2,536	819	415	296	168									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.69	9.0	<0.1	0.0	36.0		131		6.61
BDC-101	5/14/2009	2,564	847	443	324	196	-34								<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	13.0	<0.1	0.0	44.4		68		6.81
BDC-101	7/17/2009	2,628	911	507	388	260	30								<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.80	12.6	<0.1	0.0	49.0		19		7.17
BDC-101	9/9/2009	2,682	965	561	442	314	84	-49							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.25	6.2	<0.1	0.0	31.7		179		6.90
BDC-101	11/12/2009	2,746	1,029	625	506	378	148	15							0.35	1.8	<1.0	6.6	16	<1.0	16	1.37	11.3	<0.1	0-0.2	36.7		124		6.53
BDC-101	2/17/2010	2,843	1,126	722	603	475	245	112							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.86	13.9	<0.1	0.0	48.7		640		6.55
BDC-101	5/17/2010	2,932	1,215	811	692	564	334	201							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.20	20.7	<1.0	0.0	58.7		372		6.86
BDC-101	8/16/2010	3,023	1,306	902	783	655	425	292	-37						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.21	15.6	<0.1	0.0	56.9		76		7.21
BDC-101	11/8/2010	3,107	1,390	986	867	739	509	376	47						<0.25	2.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.02	2.2	<0.1	0.4	14.7		145		6.97
BDC-101	2/16/2011	3,207	1,490	1,086	967	839	609	476	147						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.46	23.9	<0.1	0.0	68.2		161		7.30
BDC-101	5/3/2011	3,283	1,566	1,162	1,043	915	685	552	223						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.57	23.7	<0.1	0.0	66.2		208		6.99
BDC-101	8/1/2011	3,373	1,656	1,252	1,133	1,005	775	642	313						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.50	17.9	<0.1	0.0	48.1		150		7.07
BDC-101	11/1/2011	3,465	1,748	1,344	1,225	1,097	867	734	405	-105					<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.69	6.1	<0.1	0.0	24.8		40		7.23
BDC-101	2/19/2012	3,575	1,858	1,454	1,335	1,207	977	844	515	5					<0.25	2.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.53	6.6		0.3	27.7		12		6.81
BDC-101	5/3/2012	3,649	1,932	1,528	1,409	1,281	1,051	918	589	79					<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	3.75	15.9		0.0	51.2		263		6.60
BDC-101	9/4/2012	3,773	2,056	1,652	1,533	1,405	1,175	1,042	713	203	-49				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.88	13.8	<0.10	0.0	36.0		154		6.97
BDC-101	11/13/2012	3,843	2,126	1,722	1,603	1,475	1,245	1,112	783	273	21				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.41	10.3	<0.10	0.0	40.4		150		6.90
BDC-101	2/20/2013	3,942	2,225	1,821	1,702	1,574	1,344	1,211	882	372	120				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	2.55	21.3	<0.10	0.2	68.0		73		6.83
BDC-101	5/20/2013	4,031	2,314	1,910	1,791	1,663	1,433	1,300	971	461	209				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	3.35	17	<0.10	0.0	52.9		-190		6.72
BDC-101	8/28/2013	4,131	2,414	2,010	1,891	1,763	1,533	1,400	1,071	561	309	-76			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	1.99	10.5	<0.10	0.0	41.5		-277		6.46
BDC-101	11/19/2013	4,214	2,497	2,093	1,974	1,846	1,616	1,483	1,154	644	392	7			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	2.53	7.6	<0.10	0.0	28.3		-173		6.67
BDC-101	2/11/2014	4,298	2,581	2,177	2,058	1,930	1,700	1,567	1,238	728	476	91			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.65	7.7	<0.10	0.0	29.1		-223		6.80
BDC-101	5/6/2014	4,382	2,665	2,261	2,142	2,014	1,784	1,651	1,322	812	560	175			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.79	19.6	<0.10	0.0	64.2		-149		6.71
BDC-101	8/7/2014	4,475	2,758	2,354	2,235	2,107	1,877	1,744	1,415	905	653	268			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.25	17.2	<0.10	0.0	51.4		71		7.22
BDC-101	11/4/2014	4,564	2,847	2,443	2,324	2,196	1,966	1,833	1,504	994	742	357			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22	7.8	<0.10	0.0	29.7		77		6.72

Table 1
AOC-05 Cleanup Action Data Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)													Volatile Organic Compounds							Aquifer Redox Conditions							Donor Indicators	
Well	Date	ORC Injection	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	Full-Scale Injection #3	Full-Scale Injection #4	Full-Scale Injection #5	Full-Scale Injection #6	Full-Scale Injection #7	Full-Scale Injection #8	Full-Scale Injection #9	Full-Scale Injection #10	Full-Scale Injection #11	TPH-G (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)	Total Xylenes (µg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Nitrite-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	ORP (mV)	TOC (mg/L)	pH
											Proposed Groundwater Cleanup Levels (a):				0.8	2.0	1294	1.7	---	---	1546	---	---	---	---	---	---	---	---	---
BDC-101	1/21/2015	4,642	2,925	2,521	2,402	2,274	2,044	1,911	1,582	1,072	820	435			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.07	21.3	<0.10	0.0	44.6		97		6.29
BDC-101	4/28/2015	4,739	3,022	2,618	2,499	2,371	2,141	2,008	1,679	1,169	917	532			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.55	19.1	<0.10	0.0	48.4		82		6.37
BDC-101	7/20/2015	4,822	3,105	2,701	2,582	2,454	2,224	2,091	1,762	1,252	1,000	615			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.96	19.7	<0.10	0.2	57.2		96		6.30
BDC-101	10/26/2015	4,920	3,203	2,799	2,680	2,552	2,322	2,189	1,860	1,350	1,098	713			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.63	8.8	<0.10	0.0	38.6		92		6.64
BDC-101	1/27/2016	5,013	3,296	2,892	2,773	2,645	2,415	2,282	1,953	1,443	1,191	806	-56		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.37	12.3	<0.10	0.0	40.3		102		6.48
BDC-101	4/13/2016	5,090	3,373	2,969	2,850	2,722	2,492	2,359	2,030	1,520	1,268	883	21		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.94	23.7	<0.10	0.0	65.4		68		6.94
BDC-101	8/9/2016	5,208	3,491	3,087	2,968	2,840	2,610	2,477	2,148	1,638	1,386	1,001	139		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.90	16.1	<0.10		45.8		40.6		6.36
BDC-101	11/1/2016	5,292	3,575	3,171	3,052	2,924	2,694	2,561	2,232	1,722	1,470	1,085	223	-35	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.70	2.3	<0.10		20.0		57.9		6.45
BDC-101	2/7/2017	5,390	3,673	3,269	3,150	3,022	2,792	2,659	2,330	1,820	1,568	1,183	321	63	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.26	17.1	<0.10		54.3		57		6.58
BDC-101	5/3/2017	5,475	3,758	3,354	3,235	3,107	2,877	2,744	2,415	1,905	1,653	1,268	406	148	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.85	24.5	<0.10		65.5		69.1		6.44
BDC-101	8/1/2017	5,565	3,848	3,444	3,325	3,197	2,967	2,834	2,505	1,995	1,743	1,358	496	238	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.86	19.3	<0.10		58.3		119.6		6.16
BDC-101	11/7/2017	5,663	3,946	3,542	3,423	3,295	3,065	2,932	2,603	2,093	1,841	1,456	594	336	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.78	12.3	<0.10		40.4		57.1		6.46
BDC-101	2/5/2018	5,753	4,036	3,632	3,513	3,385	3,155	3,022	2,693	2,183	1,931	1,546	684	426	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	5.90	9.64	<0.10		28.9		59.2		6.64
BDC-101	5/1/2018	5,838	4,121	3,717	3,598	3,470	3,240	3,107	2,778	2,268	2,016	1,631	769	511	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	4.48	15.9	<0.10		44.5		116.9		6.48
BDC-101	8/6/2018	5,935	4,218	3,814	3,695	3,567	3,337	3,204	2,875	2,365	2,113	1,728	866	608	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	2.08	11.9	<0.10		36.4		145.3		6.29
BDC-101	11/5/2018	6,026	4,309	3,905	3,786	3,658	3,428	3,295	2,966	2,456	2,204	1,819	957	699	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	1.29	6.90	<0.10		26.1		100.2		6.38
BDC-101	2/6/2019	6,119	4,402	3,998	3,879	3,751	3,521	3,388	3,059	2,549	2,297	1,912	1,050	792	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	4.09	7.73	<0.10		30.6		51.8		6.57
BDC-101	5/2/2019	6,204	4,487	4,083	3,964	3,836	3,606	3,473	3,144	2,634	2,382	1,997	1,135	877	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	2.71	11.2	<0.10		64.5		49.4		6.44
BDC-101	11/5/2019	6,391	4,674	4,270	4,151	4,023	3,793	3,660	3,331	2,821	2,569	2,184	1,322	1,064	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	2.29	7.73	<0.1		28.5		57.9		6.26
BDC-101	5/5/2020	6,573	4,856	4,452	4,333	4,205	3,975	3,842	3,513	3,003	2,751	2,366	1,504	1,246	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	4.13	14.1	<0.1		50.7		60.2		6.40
BDC-101	11/5/2020	6,757	5,040	4,636	4,517	4,389	4,159	4,026	3,697	3,187	2,935	2,550	1,688	1,430	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	3.32	9.36	<0.1		34.1		91.0		6.29
BDC-101	5/4/2021	6,937	5,220	4,816	4,697	4,569	4,339	4,206	3,877	3,367	3,115	2,730	1,868	1,610	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	4.93	15.3	<0.100		47.7		-86.1		6.32
BDC-101	11/2/2021	7,119	5,402	4,998	4,879	4,751	4,521	4,388	4,059	3,549	3,297	2,912	2,050	1,792	<0.1	0.35	<0.20	<0.20	<0.40	<0.20	<0.60	0.52	3.31	<0.100		19.2		74.2		6.52
BDC-101	5/9/2022	7,307	5,590	5,186	5,067	4,939	4,709	4,576	4,247	3,737	3,485	3,100	2,238	1,980	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	3.95	17.4	<0.100		56.5		44.0		6.34
BDC-101	11/7/2022	7,489	5,772	5,368	5,249	5,121	4,891	4,758	4,429	3,919	3,667	3,282	2,420	2,162	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.88	9.21	<0.100		28.0		19.7		6.42
BDC-102	6/11/2001														0.55	5.33	<1.0	<1.0			<1.0									
BDC-102	9/4/2001														0.38	1.61	1.89	<1.0			1.87									
BDC-102	12/3/2001														1.6	3.7	<1.0	<1.0			3.49									
BDC-102	3/13/2002														0.50	1.3	<1.0	<1.0			<1.0									
BDC-102	4/29/2002	-8													0.33	2.6	<1.0	<1.0	1.1	<1.0	1.1									
BDC-102	6/3/2002	27													<0.25	4.4	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	7/1/2002	55													0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	8/1/2002	86													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	12/2/2002	209													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	3/10/2003	307													0.26	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	6/3/2003	392													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	11/19/2003	561													0.99	120	<1.0	8.5	<1.0	<1.0	<1.0	0.38	0.19	0.011	5.5	46	1100	122.2		
BDC-102	4/28/2004	722													0.40	10	<1.0	<1.0	3.0	<1.0	3.0									
BDC-102	10/18/2004	895													0.33	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	5/10/2005	1,099													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	11/10/2005	1,283													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.82	4.4			34.0		122	18.4	
BDC-102	5/15/2006	1,469													<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.21	4.72	0.175	2.2	35.7		-11		
BDC-102	11/20/2006	1,658	-59												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.25	<0.250	<0.250	2.2	9.2		163		
BDC-102	2/20/2007	1,750	33												<0.25	5.8	<1.0	<1.0	<1.0	<1.0	<1.0	0.47	0.749	0.027	3.0	25.3		-145		6.54
BDC-102	3/19/2007	1,777	60												<0.25	18	<1.0	<1.0	32	<1.0	32	0.88	0.938	0.072	3.0	31.0		-98		6.67
BDC-102	4/24/2007	1,813	96												0.53	6.1	<1.0	3.1	100	<1.0	100	1.20	1.94	0.051	2.8	40.4		-93		6.51
BDC-102	5/17/2007	1,836	119												<0.25	1.8	<1.0	<1.0	7.4	<1.0	7.4	0.84	2.78	0.108	2.6	33.9		286		6.52
BDC-102	11/26/2007	2,029	312												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.29	1.03	0.247	3.0	55.7		46		
BDC-102	2/18/2008	2,113	396	-8											<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.51	3.91	0.054	2.8	42.8		431		5.97
BDC-102	3/27/2008	2,151	434	30											<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.85	1.3	<0.10	2.5	17.9		233		
BDC-102	5/15/2008	2,200	483	79	-40										<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.40	3.0	<0.10	3.5	19.2		-115		6.56
BDC-102	7/16/2008	2,262	545	141	22										<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.46	2.5	<0.10	3.2	13.7		-312		6.67
BDC-102	9/15/2008	2,323	606	202	83	-45									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.22	4.28	0.056	3.0	31.6		191		
BDC-102	11/20/2008	2,389	672	268	149	21									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.70	0.40	<0.10	2.0	5.6		-70		6.69
BDC-102	1/16/2009	2,446	729	325	206	78									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.00	<0.100	0.200	2.5	8.3		-235		6.70
BDC-102	2/11/2009	2,472	755	351	232	104									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.65	2.4	<0.1	3.0	20.4		-70		6.61

Table 1
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Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)													Volatile Organic Compounds							Aquifer Redox Conditions							Donor Indicators	
Well	Date	ORC Injection	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	Full-Scale Injection #3	Full-Scale Injection #4	Full-Scale Injection #5	Full-Scale Injection #6	Full-Scale Injection #7	Full-Scale Injection #8	Full-Scale Injection #9	Full-Scale Injection #10	Full-Scale Injection #11	TPH-G (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)	Total Xylenes (µg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Nitrite-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	ORP (mV)	TOC (mg/L)	pH
	Proposed Groundwater Cleanup Levels (a):														0.8	2.0	1294	1.7	---	---	1546	---	---	---	---	---	---	---	---	---
BDC-102	3/9/2009	2,498	781	377	258	130									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.00	0.9	<0.1	3.0	8.7		-46		6.65
BDC-102	4/16/2009	2,536	819	415	296	168									<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.30	0.6	<0.1	3.0	8.3		-7		6.66
BDC-102	5/14/2009	2,564	847	443	324	196	-34								<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.29	0.9	<0.1	3.4	9.8		-35		6.78
BDC-102	7/17/2009	2,628	911	507	388	260	30								<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.66	4.9	<0.1	2.2	28.6		-11		6.46
BDC-102	9/9/2009	2,682	965	561	442	314	84	-49							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.91	0.4	<0.1	2.7	5.5		2.8		6.66
BDC-102	11/12/2009	2,746	1,029	625	506	378	148	15							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.93	0.2	<0.1	3.2	2.4		-42.0		6.49
BDC-102	2/17/2010	2,843	1,126	722	603	475	245	112							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.90	3.4	0.2	2.8	17.2		892		6.56
BDC-102	5/17/2010	2,932	1,215	811	692	564	334	201							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.35	8.4	<1.0	3.0	30.1		440		6.61
BDC-102	8/16/2010	3,023	1,306	902	783	655	425	292	-37						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.61	8.9	<0.1	3.0	27.8		82		6.60
BDC-102	11/8/2010	3,107	1,390	986	867	739	509	376	47						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.34	0.4	<0.1	2.0	6.9		45		7.09
BDC-102	2/16/2011	3,207	1,490	1,086	967	839	609	476	147						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.68	3.5	<0.1	2.2	43.3		399		6.88
BDC-102	5/3/2011	3,283	1,566	1,162	1,043	915	685	552	223						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.60	12.1	<0.1	2.0	32.4		40		6.70
BDC-102	8/1/2011	3,373	1,656	1,252	1,133	1,005	775	642	313						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.01	13.6	<0.1	2.1	28.7		11		6.88
BDC-102	11/1/2011	3,465	1,748	1,344	1,225	1,097	867	734	405	-105					<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.45	9.8	<0.1	1.5	30.9		-48		7.19
BDC-102	2/19/2012	3,575	1,858	1,454	1,335	1,207	977	844	515	5					<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.25	2.4		1.0	15.4		21		6.60
BDC-102	5/3/2012	3,649	1,932	1,528	1,409	1,281	1,051	918	589	79					<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.22	11.3		2.5	40.2		248		6.44
BDC-102	9/4/2012	3,773	2,056	1,652	1,533	1,405	1,175	1,042	713	203	-49				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.20	13.2	<5.0	1.5	39.2		130		6.63
BDC-102	11/13/2012	3,843	2,126	1,722	1,603	1,475	1,245	1,112	783	273	21				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.10	1.7	<0.10	1.6	27.7		48		6.77
BDC-102	2/20/2013	3,942	2,225	1,821	1,702	1,574	1,344	1,211	882	372	120				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.17	18.4	<0.10	1.0	58.5		92		6.60
BDC-102	5/20/2013	4,031	2,314	1,910	1,791	1,663	1,433	1,300	971	461	209				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.49	20	<0.10	1.5	62.2		-280		7.31
BDC-102	8/28/2013	4,131	2,414	2,010	1,891	1,763	1,533	1,400	1,071	561	309	-76			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	1.93	12.2	<0.10	1.0	39.1		-341		6.45
BDC-102	11/19/2013	4,214	2,497	2,093	1,974	1,846	1,616	1,483	1,154	644	392	7			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	3.89	10.6	<0.10	1.2	43.4		-254		6.54
BDC-102	2/11/2014	4,298	2,581	2,177	2,058	1,930	1,700	1,567	1,238	728	476	91			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.16	19.6	<0.10	2.2	63.0		-246		6.67
BDC-102	5/6/2014	4,382	2,665	2,261	2,142	2,014	1,784	1,651	1,322	812	560	175			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.65	14.8	<0.10	1.6	56.1		-275		6.54
BDC-102	8/7/2014	4,475	2,758	2,354	2,235	2,107	1,877	1,744	1,415	905	653	268			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.07	26.7	<0.10	1.4	65.8		-65		7.01
BDC-102	11/4/2014	4,564	2,847	2,443	2,324	2,196	1,966	1,833	1,504	994	742	357			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.11	22.4	<0.10	1.2	55.9		-15.3		6.47
BDC-102	1/21/2015	4,642	2,925	2,521	2,402	2,274	2,044	1,911	1,582	1,072	820	435			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20	12.9	<0.10	1.0	49.7		-22		6.14
BDC-102	4/28/2015	4,739	3,022	2,618	2,499	2,371	2,141	2,008	1,679	1,169	917	532			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.22	23.1	<0.10	0.6	77.5		28		6.13
BDC-102	7/20/2015	4,822	3,105	2,701	2,582	2,454	2,224	2,091	1,762	1,252	1,000	615			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.33	15.5	<0.10	1.0	63.3		-54		6.18
BDC-102	10/26/2015	4,920	3,203	2,799	2,680	2,552	2,322	2,189	1,860	1,350	1,098	713			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.23	10.9	<0.10	1.0	47.5		-42		6.41
BDC-102	1/27/2016	5,013	3,296	2,892	2,773	2,645	2,415	2,282	1,953	1,443	1,191	806	-56		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.35	0.62	<0.10	1.0	11.9		-124		6.61
BDC-102	4/13/2016	5,090	3,373	2,969	2,850	2,722	2,492	2,359	2,030	1,520	1,268	883	21		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.70	12.8	<0.10	1.0	43.1		-48		6.61
BDC-102	8/9/2016	5,208	3,491	3,087	2,968	2,840	2,610	2,477	2,148	1,638	1,386	1,001	139		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.32	14.0	<0.10		42.6		-79		6.2
BDC-102	11/1/2016	5,292	3,575	3,171	3,052	2,924	2,694	2,561	2,232	1,722	1,470	1,085	223	-35	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.56	0.10	<0.10		1.4		-80.8		6.54
BDC-102	2/7/2017	5,390	3,673	3,269	3,150	3,022	2,792	2,659	2,330	1,820	1,568	1,183	321	63	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.19	4.9	<0.10		23.8		12.3		7.78
BDC-102	5/3/2017	5,475	3,758	3,354	3,235	3,107	2,877	2,744	2,415	1,905	1,653	1,268	406	148	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.52	25.5	<0.10		42.9		-11.4		6.29
BDC-102	8/1/2017	5,565	3,848	3,444	3,325	3,197	2,967	2,834	2,505	1,995	1,743	1,358	496	238	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.86	37.1	<0.10		52.4		102.4		6.23
BDC-102	11/7/2017	5,663	3,946	3,542	3,423	3,295	3,065	2,932	2,603	2,093	1,841	1,456	594	336	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.79	6.8	<0.10		28.3		67.6		6.32
BDC-102	2/5/2018	5,753	4,036	3,632	3,513	3,385	3,155	3,022	2,693	2,183	1,931	1,546	684	426	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.82	0.718	0.170		8.15		-97.4		6.50
BDC-102	5/1/2018	5,838	4,121	3,717	3,598	3,470	3,240	3,107	2,778	2,268	2,016	1,631	769	511	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.24	13.4	<0.10		29.5		172.4		6.36
BDC-102	8/6/2018	5,935	4,218	3,814	3,695	3,567	3,337	3,204	2,875	2,365	2,113	1,728	866	608	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.39	15.7	<0.10		31.7		146.6		6.35
BDC-102	11/5/2018	6,026	4,309	3,905	3,786	3,658	3,428	3,295	2,966	2,456	2,204	1,819	957	699	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.88	1.46	<0.10		16.4		-35.9		6.42
BDC-102	2/6/2019	6,119	4,402	3,998	3,879	3,751	3,521	3,388	3,059	2,549	2,297	1,912	1,050	792	0.192	<0.20	<0.20	0.98	12.5	<0.20	12.6	0.27	1.53	0.154		15.2		-114.2		6.65
BDC-102	5/2/2019	6,204	4,487	4,083	3,964	3,836	3,606	3,473	3,144	2,634	2,382	1,997	1,135	877	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.91	9.63	<0.10		47.7		55.5		6.31
BDC-102	11/5/2019	6,391	4,674	4,270	4,151	4,023	3,793	3,660	3,331	2,821	2,569	2,184	1,322	1,064	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.59	8.12	<0.1		33.8		65.6		6.30
BDC-102	5/5/2020	6,573	4,856	4,452	4,333	4,205	3,975	3,842	3,513	3,003	2,751	2,366	1,504	1,246	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	1.15	1.07	<0.1		13.1		44.9		6.48
BDC-102	11/5/2020	6,757	5,040	4,636	4,517	4,389	4,159	4,026	3,697	3,187	2,935	2,550	1,688	1,430	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.66	2.33	<0.1		25.4		80.6		6.23
BDC-102	5/4/2021	6,937	5,220	4,816	4,697	4,569	4,339	4,206	3,877	3,367	3,115	2,730	1,868	1,610	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	1.62	16.5	<0.500		44.4		29.2		6.44
BDC-102	11/2/2021	7,119	5,402	4,998	4,879	4,751	4,521	4,388	4,059	3,549	3,297	2,912	2,050	1,792	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.63	<0.100	<0.100		12.4		37.5		6.66
BDC-102	5/9/2022	7,307	5,590	5,186	5,067	4,939	4,709	4,576	4,247	3,737	3,485	3,100	2,238	1,980	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	6.12	<0.100	<0.100		19.3		-88.9		6.51
BDC-102	11/7/2022	7,489	5,772	5,368	5,249	5,121	4,891	4,758	4,429	3,919	3,667	3,282	2,420	2,162	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.92	0.526	<0.100		21.4		27.0		6.43
BDC-103	6/11/2001														177	875	12,010	1,985			11,430									
BDC-103	9/4/2001														123	494	3,760	419			2,636									
BDC-103 (b)	12/3/2001														120	5,100	2,300,000	10,000			3,400,000									
BDC-103	3/13/2002														200	1,700	17,000	4,900			26,400									
BDC-103	4/29/2002	-8													200	980	16,000	5,400	20,000	7,000	27,000									

Table 1
AOC-05 Cleanup Action Data Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)													Volatile Organic Compounds							Aquifer Redox Conditions							Donor Indicators	
Well	Date	ORC Injection	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	Full-Scale Injection #3	Full-Scale Injection #4	Full-Scale Injection #5	Full-Scale Injection #6	Full-Scale Injection #7	Full-Scale Injection #8	Full-Scale Injection #9	Full-Scale Injection #10	Full-Scale Injection #11	TPH-G (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)	Total Xylenes (µg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Nitrite-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	ORP (mV)	TOC (mg/L)	pH
		Proposed Groundwater Cleanup Levels (a):													0.8	2.0	1294	1.7	---	---	1546	---	---	---	---	---	---	---	---	---
BDC-103	6/3/2002	27													200	960	17,000	5,100	20,000	7,100	27,100									
BDC-103	7/1/2002	55													240	1,300	16,000	5,200	20,000	6,800	26,800									
BDC-103	8/1/2002	86													270	4,600	18,000	5,200	19,000	6,600	25,600									
BDC-103	12/2/2002	209													250	1,400	15,000	5,000	22,000	6,900	28,900									
BDC-103	3/10/2003	307													180	780	13,000	5,200	20,000	6,700	26,700									
BDC-103	6/3/2003	392													220	900	10,000	5,000	20,000	6,600	26,600									
BDC-103	11/19/2003	561													180	850	8,300	4,500	18,000	5,500	23,500	0.38	0.012	0.011	5.5	53	630	-75.9		
BDC-103	4/28/2004	722													160	1,600	6,600	3,900	16,000	5,100	21,100									
BDC-103	10/18/2004	895													140	2,100	5,500	3,700	15,000	4,400	19,400									
BDC-103	5/10/2005	1,099													110	2,200	5,500	3,800	14,000	3,200	17,200									
BDC-103	11/10/2005	1,283													90	2,200	3,500	3,700	12,000	2,500	15,000	0.72	<1.0			11.9		147	15.4	
BDC-103	5/15/2006	1,469													84	1,600	3,800	3,100	10,000	2,200	12,000	0.92	<0.010	0.054	3.5	15.2		106		
BDC-103	11/20/2006	1,658	-59												51	2,000	730	2,200	3,900	1,000	4,900	1.23	<0.10	<0.10	2.4	28.3		202		
BDC-103	2/20/2007	1,750	33												26	460	420	140	3,600	1,600	5,200	0.31	60.8	11.1	0.5	99.2		109		6.54
BDC-103	3/19/2007	1,777	60												30	490	88	130	3,500	1,700	5,200	0.63	27.9	8.28	0.4	141		4		6.79
BDC-103	4/24/2007	1,813	96												36	820	440	220	3500	1800	5300	0.84	7.54	3.56	2.4	59.2		-14		6.70
BDC-103	5/17/2007	1,836	119												77	1,400	4,300	1,100	8,300	3,200	11,500	0.61	0.138	0.079	3.6	169		244		6.82
BDC-103	11/26/2007	2,029	312												190	3,300	21,000	4,000	11,000	4,900	15,900	3.37	0.063	0.049	3.6	49.1		-118		
BDC-103	2/18/2008	2,113	396	-8											66	1,100	2,600	700	7,500	1,900	9,400	2.06	7.75	0.134	2.8	163		552		5.97
BDC-103	3/27/2008	2,151	434	30											84	1,500	1,900	1,100	9,700	3,000	12,700	1.60	54.1	18	4.0	115.0		182		
BDC-103	5/15/2008	2,200	483	79	-40										91	2,700	4,400	1,400	11,000	3,600	14,600	1.38	<0.10	<0.10	3.2	192		-138		7.11
BDC-103	7/16/2008	2,262	545	141	22										79	1,800	440	490	10,000	3,100	13,100	1.61	56.1	16.6	2.8	149		-226		6.72
BDC-103	9/15/2008	2,323	606	202	83	-45									110	2,300	7,600	1,500	10,000	3,600	13,600	0.48	0.330	0.218	3.2	218		189		
BDC-103	11/20/2008	2,389	672	268	149	21									47	1,200	260	110	7,000	2,100	9,100	0.21	152	12.5	2.0	120		-1.2		6.66
BDC-103	1/16/2009	2,446	729	325	206	78									11	190	220	12	1,000	480	1,480	0.24	193	2.32	0.6	62.5		-181		6.19
BDC-103	2/11/2009	2,472	755	351	232	104									36	820	510	<100	2,900	1,500	4,400	1.66	82.0	6.7	0.8	178		-65		6.69
BDC-103	3/9/2009	2,498	781	377	258	130									27	1100	440	18	2,400	1,200	3,600	0	47.3	2.4	0.4	192		17		6.80
BDC-103	4/16/2009	2,536	819	415	296	168									30	710	310	<50	2,700	1,200	3,900	0.95	64.8	5.6	0.2-0.4	194		62		6.77
BDC-103	5/14/2009	2,564	847	443	324	196	-34								30	680	320	20	2,400	1,500	3,900	0.48	49.8	4.8	0.8	222		20		6.85
BDC-103	7/17/2009	2,628	911	507	388	260	30								19	410	280	32	630	1,000	1,630	2.60	26.6	2.0	1.0	104		29		6.98
BDC-103	9/9/2009	2,682	965	561	442	314	84	-49							21	620	270	83	700	1200	1,900	0.88	<0.1	<0.1	2.5	134		2.8		7.01
BDC-103	11/12/2009	2,746	1,029	625	506	378	148	15							24	340	140	27	1,800	1,200	3,000	1.42	94.1	7.7	0.4	71.7		117		6.11
BDC-103	2/17/2010	2,843	1,126	722	603	475	245	112							0.73	10	<1.0	<1.0	3.1	22	25	1.45	123	1.1	0.0	60.3		939		6.22
BDC-103	5/17/2010	2,932	1,215	811	692	564	334	201							3.1	79	44	5.2	60	86	146	1.56	67.9	2.6	0.4	71.6		436		6.63
BDC-103	8/16/2010	3,023	1,306	902	783	655	425	292	-37						8.0	740	380	110	420	320	740	2.24	2.4	0.1	2.0	72.5		184		6.96
BDC-103	11/8/2010	3,107	1,390	986	867	739	509	376	47						6.3	240	11	1.7	180	540	720	7.46	55.8	1.5	0.0	123		199		7.05
BDC-103	2/16/2011	3,207	1,490	1,086	967	839	609	476	147						0.28	4.6	<1.0	<1.0	<1.0	5.4	5.4	5.18	133	0.6		74.6		508		6.52
BDC-103	5/3/2011	3,283	1,566	1,162	1,043	915	685	552	223						<0.25	9.1	<1.0	<1.0	<1.0	2.2	2.2	2.15	140	0.2	0.0	74.4		393		6.35
BDC-103	8/1/2011	3,373	1,656	1,252	1,133	1,005	775	642	313						0.30	76	<1.0	1.8	7.8	2.5	10.3	5.67	57.6	<0.1	0.2	63.2		168		7.09
BDC-103	11/1/2011	3,465	1,748	1,344	1,225	1,097	867	734	405	-105					33	1300	2200	780	2300	1300	3,600	1.72	<0.1	<0.1	1.2	8.1		-226		7.38
BDC-103	2/19/2012	3,575	1,858	1,454	1,335	1,207	977	844	515	5					2.2	5.1	31	19	260	69	329	0.21	143		0.3	57.1		36		6.41
BDC-103	5/3/2012	3,649	1,932	1,528	1,409	1,281	1,051	918	589	79					<0.25	16	1.4	<1.0	3.6	14	17.6	0.11	149	0.83	0.0	56.2		239		6.49
BDC-103	9/4/2012	3,773	2,056	1,652	1,533	1,405	1,175	1,042	713	203	-49				0.72	530	24.0	9.4	40	42	82	0.45	7.2	<0.10	0.4	66.9		146		6.80
BDC-103	11/13/2012	3,843	2,126	1,722	1,603	1,475	1,245	1,112	783	273	21				4.5	120	9.5	3.7	210	380	590	1.02	165	2.8	0.4	93.6		108		6.50
BDC-103	2/20/2013	3,942	2,225	1,821	1,702	1,574	1,344	1,211	882	372	120				<0.25	<1.0	<1.0	<1.0	<2.0	3.4	3.4	0.14	161	0.60	0.2	51.6		109		6.42
BDC-103	5/20/2013	4,031	2,314	1,910	1,791	1,663	1,433	1,300	971	461	209				<0.25	9.3	<1.0	<1.0	4.4	1.8	6.2	0.29	161	<0.10	0.0	47.1		-281		7.47
BDC-103	8/28/2013	4,131	2,414	2,010	1,891	1,763	1,533	1,400	1,071	561	309	-76			2	210	56	47	260	91	351	1.60	17.8	0.16	0.6	54.2		-290		6.83
BDC-103	11/19/2013	4,214	2,497	2,093	1,974	1,846	1,616	1,483	1,154	644	392	7			5.9	22	37	31	590	350	940	4.42	154	2.6	0.0	51.0		-222		6.48
BDC-103	2/11/2014	4,298	2,581	2,177	2,058	1,930	1,700	1,567	1,238	728	476	91			<0.25	<1.0	<1.0	<1.0	4.9	3.6	8.5	2.81	79.9	0.15	0.0	99.2		-254		6.77
BDC-103	5/6/2014	4,382	2,665	2,261	2,142	2,014	1,784	1,651	1,322	812	560	175			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.19	215	<0.10	0.0	59.8		-233		6.21
BDC-103	8/7/2014	4,475	2,758	2,354	2,235	2,107	1,877	1,744	1,415	905	653	268			<0.25	7.8	<1.0	<1.0	2.4	<1.0	2.4	2.67	111	<0.10	0.0	59.7		-46		7.14
BDC-103	11/4/2014	4,564	2,847	2,443	2,324	2,196	1,966	1,833	1,504	994	742	357			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.27	151	0.68	0.0	66.7		121		6.31
BDC-103	1/21/2015	4,642	2,925	2,521	2,402	2,274	2,044	1,911	1,582	1,072	820	435			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20	137	0.27	0.0	69.1		118		6.05
BDC-103	4/28/2015	4,739	3,022	2,618	2,499	2,371	2,141	2,008	1,679	1,169	917	532			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.16	74.8	<0.10	0.0	90.3		44		6.23
BDC-103	7/20/2015	4,822	3,105	2,701	2,582	2,454	2,224	2,091	1,762	1,252	1,000	615			<0.25	54	1.0	3.7	8.3	2.6	10.9	0.18	8.1	<0.10	0.2	70.9		-22		6.48
BDC-103	10/26/2015	4,920	3,203	2,799	2,680	2,552	2,322	2,189	1,860	1,350	1,098	713			19	480	740	600	1800	850	2,650	0.11	<0.10	<0.10	1.0	0.55		-85		6.61
BDC-103	1/27/2016	5,013	3,296	2,892	2,773	2,645	2,415	2,282	1,953	1,443	1,191	806	-56		<0.25	3.9	1.2	3.3	12	7.0	19	0.22	32.5	<0.10	0.0	102		-10		6.56

Table 1
AOC-05 Cleanup Action Data Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)													Volatile Organic Compounds							Aquifer Redox Conditions							Donor Indicators	
Well	Date	ORC Injection	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	Full-Scale Injection #3	Full-Scale Injection #4	Full-Scale Injection #5	Full-Scale Injection #6	Full-Scale Injection #7	Full-Scale Injection #8	Full-Scale Injection #9	Full-Scale Injection #10	Full-Scale Injection #11	TPH-G (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)	Total Xylenes (µg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Nitrite-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	ORP (mV)	TOC (mg/L)	pH
											Proposed Groundwater Cleanup Levels (a):				0.8	2.0	1294	1.7	---	---	1546	---	---	---	---	---	---	---	---	---
BDC-103	4/13/2016	5,090	3,373	2,969	2,850	2,722	2,492	2,359	2,030	1,520	1,268	883	21		<0.25	<1.0	<1.0	<1.0	<1.0	2.0	2.0	0.46	102	0.43	0.0	51.0		6.7		6.59
BDC-103	8/9/2016	5,208	3,491	3,087	2,968	2,840	2,610	2,477	2,148	1,638	1,386	1,001	139		1.7	56	4.9	42	210	51	261	0.0	<0.10	<0.10		31.1		-98.6		6.90
BDC-103	11/1/2016	5,292	3,575	3,171	3,052	2,924	2,694	2,561	2,232	1,722	1,470	1,085	223	-35	4.5	83	24	120	360	180	540	0.3	<0.10	<0.10		0.68		-182.9		6.70
BDC-103	2/7/2017	5,390	3,673	3,269	3,150	3,022	2,792	2,659	2,330	1,820	1,568	1,183	321	63	<0.25	<1.0	<1.0	<1.0	<1.0	2.1	2.1	0.41	194	0.15		47.4		77.2		6.27
BDC-103	5/3/2017	5,475	3,758	3,354	3,235	3,107	2,877	2,744	2,415	1,905	1,653	1,268	406	148	<0.25	<1.0	<1.0	<1.0	<1.0	1.7	1.7	0.78	215	0.40		49.4		67.1		6.25
BDC-103	8/1/2017	5,565	3,848	3,444	3,325	3,197	2,967	2,834	2,505	1,995	1,743	1,358	496	238	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.72	172	<0.10		64.4		111.1		6.23
BDC-103	11/7/2017	5,663	3,946	3,542	3,423	3,295	3,065	2,932	2,603	2,093	1,841	1,456	594	336	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.86	71	<0.10		73.2		58.2		6.54
BDC-103	2/5/2018	5,753	4,036	3,632	3,513	3,385	3,155	3,022	2,693	2,183	1,931	1,546	684	426	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	1.27	128	0.319		51.7		144		5.93
BDC-103	5/1/2018	5,838	4,121	3,717	3,598	3,470	3,240	3,107	2,778	2,268	2,016	1,631	769	511	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.27	104	<0.10		71.6		184.7		5.98
BDC-103	8/6/2018	5,935	4,218	3,814	3,695	3,567	3,337	3,204	2,875	2,365	2,113	1,728	866	608	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.38	65.8	<0.10		70.0		166.9		6.44
BDC-103	11/5/2018	6,026	4,309	3,905	3,786	3,658	3,428	3,295	2,966	2,456	2,204	1,819	957	699	0.113	1.82	<0.20	0.31	0.91	0.47	1.37	0.58	0.333	<0.10		63.1		34.1		6.74
BDC-103	2/6/2019	6,119	4,402	3,998	3,879	3,751	3,521	3,388	3,059	2,549	2,297	1,912	1,050	792	<0.1	<0.20	<0.20	0.40	0.79	<0.20	0.79	0.31	112	0.180		219		67.8		6.88
BDC-103	5/2/2019	6,204	4,487	4,083	3,964	3,836	3,606	3,473	3,144	2,634	2,382	1,997	1,135	877	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.35	113	<0.10		160		50.3		6.37
BDC-103	11/5/2019	6,391	4,674	4,270	4,151	4,023	3,793	3,660	3,331	2,821	2,569	2,184	1,322	1,064	1.29	13.2	<0.20	24.8	58.3	0.99	59.3	0.11	0.397	<0.1		59.6		-29.8		6.92
BDC-103	5/5/2020	6,573	4,856	4,452	4,333	4,205	3,975	3,842	3,513	3,003	2,751	2,366	1,504	1,246	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.26	61.8	<0.1		101		136.1		6.54
BDC-103	11/4/2020	6,756	5,039	4,635	4,516	4,388	4,158	4,025	3,696	3,186	2,934	2,549	1,687	1,429	0.393	0.74	<0.20	27.7	9.57	0.36	9.93	1.44	<0.1	<0.1		76.5		-127.0		6.83
BDC-103	5/4/2021	6,937	5,220	4,816	4,697	4,569	4,339	4,206	3,877	3,367	3,115	2,730	1,868	1,610	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	1.97	62.3	<0.100		99.4		-84.3		6.80
BDC-103	11/2/2021	7,119	5,402	4,998	4,879	4,751	4,521	4,388	4,059	3,549	3,297	2,912	2,050	1,792	0.57	1.07	<0.20	33.5	10.7	0.80	11.5	0.33	<0.100	<0.100		118		20.2		6.97
BDC-103	5/9/2022	7,307	5,590	5,186	5,067	4,939	4,709	4,576	4,247	3,737	3,485	3,100	2,238	1,980	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.32	49.3	<0.100		281		102.9		6.78
BDC-103	11/16/2022	7,498	5,781	5,377	5,258	5,130	4,900	4,767	4,438	3,928	3,676	3,291	2,429	2,171	0.462	0.5	<0.20	28.4	4.88	0.86	5.73	0.33	<0.100	<0.100		175		-12.3		7.14
BDC-104	2/18/2008	2,113	396	-8											2.9	<1.0	<1.0	47	180	28	208	2.09	1.63	0.072	3.0	18.7		598		
BDC-104	3/27/2008	2,151	434	30											3.2	<1.0	<1.0	22	220	52	272	1.34	161	0.1	0.5	52.2		259		
BDC-104	5/15/2008	2,200	483	79	-40										1.0	<1.0	<1.0	7.0	26	22	48	1.24	28.7	0.7	0.4	26.6		94		6.69
BDC-104	7/16/2008	2,262	545	141	22										2.3	<1.0	2.9	3.3	110	50	160	1.56	196	0.4	0.0	74.7		-221		7.17
BDC-104	9/15/2008	2,323	606	202	83	-45									0.64	<1.0	2.6	<1.0	20	16	36	0.06	122	0.729	0.0	38.4		191		
BDC-104	11/20/2008	2,389	672	268	149	21									<0.25	<1.0	<1.0	<1.0	1.4	4.1	5.5	0.96	67.2	<0.10	0.2	24.3		-27		7.46
BDC-104	1/16/2009	2,446	729	325	206	78									0.26	<1.0	<1.0	<1.0	<1.0	5.5	5.5	0.05	71.4	0.204	0.6	34.6		-164		6.86
BDC-104	2/11/2009	2,472	755	351	232	104									<0.25	<1.0	<1.0	<1.0	1.3	1.1	2.4	1.78	95.4 J	0.1	0.2	20.1		-75		6.68
BDC-104	3/9/2009	2,498	781	377	258	130									<0.25	<1.0	<1.0	<1.0	1.3	1.1	2.4	0	91.5	<0.1	0.0	19.2		20		6.67
BDC-104	4/16/2009	2,536	819	415	296	168									<0.25	<1.0	<1.0	<1.0	<1.0	1.6	1.6	0.34	67.2	<0.1	0.0	21.6		67		6.63
BDC-104	5/14/2009	2,564	847	443	324	196	-34								<0.25	<1.0	<1.0	<1.0	<1.0	1.4	1.4	0.51	63.4	<0.1	0.0	20.1		6		6.70
BDC-104	7/17/2009	2,628	911	507	388	260	30								<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.41	21.0	0.5	1.0	30.8		-3		7.30
BDC-104	9/9/2009	2,682	965	561	442	314	84	-49							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.63	39.8	0.1	0.8	41.6		61		7.20
BDC-104	11/12/2009	2,746	1,029	625	506	378	148	15							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.99	115	1.4	0.0	24.1		68		6.49
BDC-104	2/17/2010	2,843	1,126	722	603	475	245	112							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.73	119	0.1	0.0	111		868		6.93
BDC-104	5/17/2010	2,932	1,215	811	692	564	334	201							<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.98	47.4	<1.0	0.6	30.5		482		6.74
BDC-104	8/16/2010	3,023	1,306	902	783	655	425	292	-37						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.59	38.4	0.2	2.5	23.6		76		6.92
BDC-104	11/8/2010	3,107	1,390	986	867	739	509	376	47						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.87	32.5	<0.1	0.0	18.6		115		7.23
BDC-104	2/16/2011	3,207	1,490	1,086	967	839	609	476	147						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.48	40.0	<0.1	0.4	24.1		423		6.71
BDC-104	5/3/2011	3,283	1,566	1,162	1,043	915	685	552	223						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.19	31.3	<0.1	1.2	26.8		231		6.63
BDC-104	8/1/2011	3,373	1,656	1,252	1,133	1,005	775	642	313						<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.10	11.7	<0.1	0.0	21.2		121		7.20
BDC-104	11/1/2011	3,465	1,748	1,344	1,225	1,097	867	734	405	-105					<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.43	14.6	<0.1	0.0	18.7		-53		7.40
BDC-104	2/19/2012	3,575	1,858	1,454	1,335	1,207	977	844	515	5					<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.26	21.6		0.0	29.2		66		6.23
BDC-104	5/3/2012	3,649	1,932	1,528	1,409	1,281	1,051	918	589	79					<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.06	19.4		1.5	26.5		207		6.78
BDC-104	9/4/2012	3,773	2,056	1,652	1,533	1,405	1,175	1,042	713	203	-49				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.68	12.3	<0.10	0.5	22.1		130		7.11
BDC-104	11/13/2012	3,843	2,126	1,722	1,603	1,475	1,245	1,112	783	273	21				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.24	0.80	<0.10		5.1		64		7.19
BDC-104	2/20/2013	3,942	2,225	1,821	1,702	1,574	1,344	1,211	882	372	120				0.28	<1.0	6.5	<1.0	17	3.3	20.3	0.44	2.5	<0.10	0.2	3.6		82		6.96
BDC-104	5/20/2013	4,031	2,314	1,910	1,791	1,663	1,433	1,300	971	461	209				<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	2.01	20.0	<0.10	0.0	20.8		-230		7.16
BDC-104	8/28/2013	4,131	2,414	2,010	1,891	1,763	1,533	1,400	1,071	561	309	-76			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.52	16.4	<0.10	1.0	35.3		-322		6.82
BDC-104	11/19/2013	4,214	2,497	2,093	1,974	1,846	1,616	1,483	1,154	644	392	7			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	8.09	0.47	<0.10	0.0	3.1		-35		7.16
BDC-104	2/11/2014	4,298	2,581	2,177	2,058	1,930	1,700	1,567	1,238	728	476	91			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.11	0.54	<0.10	0.0	3.4		-135		7.04
BDC-104	5/6/2014	4,382	2,665	2,261	2,142	2,014	1,784	1,651	1,322	812	560	175			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.49	0.35	<0.10	0.0	4.2		-113		6.82
BDC-104	8/7/2014	4,475	2,758	2,354	2,235	2,107	1,877	1,744	1,415	905	653	268			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.04	2.9	<0.10	0.0	4.4		64		7.44
BDC-104	11/4/2014	4,564	2,847	2,443	2,324	2,196	1,966	1,833	1,504	994	742	357			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.66	2.1	<0.10	0.0	10.1		39		6.50
BDC-104	1/21/2015	4,642	2,925	2,521	2,402	2,274	2,044	1,911	1,582	1,072	820	435			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.02	11.3	<0.10	0.0	36.3		135		5.87
BDC-104	4/28/2015	4,739	3,022	2,618	2,499	2,371	2,141	2,008	1,679	1,169	917	532			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.37	11.3	<0.10	0.0	74.4		85		6.09

Table 1
AOC-05 Cleanup Action Data Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)													Volatile Organic Compounds							Aquifer Redox Conditions							Donor Indicators	
Well	Date	ORC Injection	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	Full-Scale Injection #3	Full-Scale Injection #4	Full-Scale Injection #5	Full-Scale Injection #6	Full-Scale Injection #7	Full-Scale Injection #8	Full-Scale Injection #9	Full-Scale Injection #10	Full-Scale Injection #11	TPH-G (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)	Total Xylenes (µg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Nitrite-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	ORP (mV)	TOC (mg/L)	pH
		Proposed Groundwater Cleanup Levels (a):													0.8	2.0	1294	1.7	---	---	1546	---	---	---	---	---	---	---	---	---
BDC-104	7/20/2015	4,822	3,105	2,701	2,582	2,454	2,224	2,091	1,762	1,252	1,000	615			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.18	11.7	<0.10	0.2	74.4		-22		6.48
BDC-104	10/26/2015	4,920	3,203	2,799	2,680	2,552	2,322	2,189	1,860	1,350	1,098	713			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20	14.1	<0.10	1.0	84.2		-2.0		6.72
BDC-104	1/27/2016	5,013	3,296	2,892	2,773	2,645	2,415	2,282	1,953	1,443	1,191	806	-56		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.13	11.5	<0.10	0.0	69.1		16.0		6.67
BDC-104	4/13/2016	5,090	3,373	2,969	2,850	2,722	2,492	2,359	2,030	1,520	1,268	883	21		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.65	20.2	<0.10	0.0	96.9		31		6.75
BDC-104	8/9/2016	5,208	3,491	3,087	2,968	2,840	2,610	2,477	2,148	1,638	1,386	1,001	139		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	8.1	<0.10		42.2		-27.2		6.30
BDC-104	11/1/2016	5,292	3,575	3,171	3,052	2,924	2,694	2,561	2,232	1,722	1,470	1,085	223	-35	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.91	3.4	<0.10		22.3		-9.8		6.49
BDC-104	2/7/2017	5,390	3,673	3,269	3,150	3,022	2,792	2,659	2,330	1,820	1,568	1,183	321	63	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.03	0.58	<0.10		5.2		69.2		5.93
BDC-104	5/3/2017	5,475	3,758	3,354	3,235	3,107	2,877	2,744	2,415	1,905	1,653	1,268	406	148	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.06	23.6	<0.10		84.3		80.9		5.85
BDC-104	8/1/2017	5,565	3,848	3,444	3,325	3,197	2,967	2,834	2,505	1,995	1,743	1,358	496	238	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.00	7.0	<0.10		29.1		125.9		5.83
BDC-104	11/7/2017	5,663	3,946	3,542	3,423	3,295	3,065	2,932	2,603	2,093	1,841	1,456	594	336	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.82	0.17	<0.10		4.5		60.4		6.89
BDC-104	2/5/2018	5,753	4,036	3,632	3,513	3,385	3,155	3,022	2,693	2,183	1,931	1,546	684	426	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	6.93	0.230	<0.10		4.76		90.6		6.18
BDC-104	5/1/2018	5,838	4,121	3,717	3,598	3,470	3,240	3,107	2,778	2,268	2,016	1,631	769	511	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	4.25	1.22	<0.10		4.05		172.3		6.09
BDC-104	8/6/2018	5,935	4,218	3,814	3,695	3,567	3,337	3,204	2,875	2,365	2,113	1,728	866	608	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	3.02	9.11	<0.10		36.5		149.8		6.28
BDC-104	11/5/2018	6,026	4,309	3,905	3,786	3,658	3,428	3,295	2,966	2,456	2,204	1,819	957	699	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.73	6.97	<0.10		35.4		156.6		6.09
BDC-104	2/6/2019	6,119	4,402	3,998	3,879	3,751	3,521	3,388	3,059	2,549	2,297	1,912	1,050	792	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.48	11.5	0.111		49.3		52.6		6.46
BDC-104	5/2/2019	6,204	4,487	4,083	3,964	3,836	3,606	3,473	3,144	2,634	2,382	1,997	1,135	877	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	2.41	17.6	<0.10		44.6		66.2		6.34
BDC-104	11/5/2019	6,391	4,674	4,270	4,151	4,023	3,793	3,660	3,331	2,821	2,569	2,184	1,322	1,064	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	1.30	6.30	<0.1		29.5		61.7		6.48
BDC-104	5/5/2020	6,573	4,856	4,452	4,333	4,205	3,975	3,842	3,513	3,003	2,751	2,366	1,504	1,246	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	2.64	7.35	<0.1		28.8		139.0		6.46
BDC-104	11/4/2020	6,756	5,039	4,635	4,516	4,388	4,158	4,025	3,696	3,186	2,934	2,549	1,687	1,429	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	1.80	2.69	<0.1		13.9		57.7		6.40
BDC-104	5/4/2021	6,937	5,220	4,816	4,697	4,569	4,339	4,206	3,877	3,367	3,115	2,730	1,868	1,610	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	4.51	6.24	<0.100		17.4		122.3		5.97
BDC-104	11/2/2021	7,119	5,402	4,998	4,879	4,751	4,521	4,388	4,059	3,549	3,297	2,912	2,050	1,792	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.40	<0.100	<0.100		0.134		81.2		6.55
BDC-104	5/9/2022	7,307	5,590	5,186	5,067	4,939	4,709	4,576	4,247	3,737	3,485	3,100	2,238	1,980	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	2.61	5.75	<0.100		29.4		99.3		6.27
BDC-104	11/7/2022	7,489	5,772	5,368	5,249	5,121	4,891	4,758	4,429	3,919	3,667	3,282	2,420	2,162	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	0.44	3.64	<0.100		21.9		28.7		6.32

Abbreviations and Acronyms:

µg/L = micrograms per liter
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
NA = not applicable, not available
ORP = oxidation reduction potential
TOC = total organic carbon
TPH-G = total petroleum hydrocarbon-gasoline

Notes:

(a) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associate
(b) BTEX data questionable for this event. Concentrations inconsistent with TPH-G data for indicated event and BTEX data from other
Box = Exceedance of proposed cleanup level
= No sample collected or sample not analyzed for specified constituent.

Injection Dates	Months Since Prior Injection Event	
05/07/02	---	ORC
01/18/07	57	Pilot -scale nitrate
02/26/08	13	1st full scale injection
06/24/08	4	2nd full scale injection
10/30/08	4	3rd full scale injection
06/17/09	8	4th full scale injection (start ammonium phosphate, 1/3 ammonium nitrate dose to both wells)
10/28/09	4	5th full scale injection (103 full dose, 104 half dose)
09/22/10	11	6th full scale injection (103 only full dose)
02/14/12	17	7th full scale injection (103 only full dose)
10/23/12	8	8th full scale injection (103 only 1.5x volume dose)
11/12/13	13	9th full scale injection (103 only 1.5x volume dose)
03/23/16	29	10th full scale injection (103 only 1.5x volume, half concentration dose)
12/06/16	9	11th full scale injection (103 only 1.5x volume dose)

Table 2
AOC-05 Nitrate Concentrations at Downgradient Monitoring Locations
Boeing Developmental Center
Tukwila, Washington

			Aquifer Redox Conditions					
Area	Well	Date	DO (mg/L)	**Nitrate-Nitrogen (mg/L)**	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)
SWMU-17	BDC-05-04	5/15/2006		**12.3**	2.6	33.4		
SWMU-17	BDC-05-04	10/23/2008	2.45	**7.6**	0.1	31.0	0.29	73.5
SWMU-17	BDC-05-04	11/2/2008	0.59	**4.5**	0.8	25,2	0.05	-16
SWMU-17	BDC-05-04	12/16/2008	0.55	**5.5**	1.0	30.4	1.61	-98
SWMU-17	BDC-05-04	1/16/2009	0.06	**4.3**	1.0	21.8	1.48	-192
SWMU-17	BDC-05-04	2/11/2009	2.45	**5.9**	1.0	31.8	1.06	-54
SWMU-17	BDC-05-04	3/9/2009	0.27	**4.8**	1.5	30.1	0.20	35
SWMU-17	BDC-05-04	4/16/2009	1.48	**5.9**	1.4	33.6	<0.0007	68
SWMU-17	BDC-05-04	5/13/2009	0.33	**4.5**	1.6	26.6	0.37	49
SWMU-17	BDC-05-04	8/16/2009	0.86	**5.4**	2.2	30.6	<0.0007	93
SWMU-17	BDC-05-04	11/13/2009	0.56	**2.2**	3.0	18.4	2.44	109
SWMU-17	BDC-05-04	2/16/2010	0.88	**<0.1**	3.3	24.6	1.49	899
SWMU-17	BDC-05-04	5/18/2010	0.75	**<0.1**	3.0	25.4	1.32	473
SWMU-17	BDC-05-04	8/17/2010	1.00	**<0.1**	2.8	17.1	3.53	108
SWMU-17	BDC-05-04	11/9/2010	2.21	**<0.1**	2.2	21.3	3.00	101
SWMU-17	BDC-05-04	2/15/2011	2.50	**<0.1**	2.4	19.4	4.46	93
SWMU-17	BDC-05-04	5/2/2011	1.69	**<0.1**	2.2	18.0	1.75	49
SWMU-17	BDC-05-04	11/2/2011	1.52	**<1.0**	1.2	<1.0		-3
SWMU-17	BDC-05-04	5/7/2012	0.16		2.0	21.5		98
SWMU-17	BDC-05-04	9/4/2012	0.21	**<0.10**		16.6		96
SWMU-17	BDC-05-04	11/13/2012	0.03	**<0.10**	1.8	16.9		64
SWMU-17	BDC-05-04	5/23/2013	0.49		1.5	13.7		-310
SWMU-17	BDC-05-04	11/19/2013	2.56	**<0.10**	1.0	13.2		-259
SWMU-17	BDC-05-04	5/6/2014	3.49	**0.40**		14.4		-299
SWMU-17	BDC-05-04	11/4/2014	0.05	**<0.10**	1.6	<1.0		-126
SWMU-17	BDC-05-04	4/28/2015	0.11	**5.0**	0.4	13.5		74
SWMU-17	BDC-05-04	10/26/2015	0.08	**<0.10**	1.5	<1.0		-101
SWMU-17	BDC-05-04	4/13/2016	0.57	**5.5**		13.9		46
SWMU-17	BDC-05-04	11/2/2016	0.39	**<0.10**		0.75		-140.5
SWMU-17	BDC-05-04	5/3/2017	0.42	**8.8**	0.6	12.0		73.8
SWMU-17	BDC-05-04	11/6/2017	0.93	**<0.050**	2.0	2.7		-28.3
SWMU-17	BDC-05-04	5/2/2018	4.25		4.7	<1.0		-107.0
SWMU-17	BDC-05-04	11/7/2018	0.97	**<0.10**	1.8	0.842	13.2	-24.8
SWMU-17	BDC-05-04	5/3/2019	0.78	**<0.10**	3.3	8.21	13.3	-106.2
SWMU-17	BDC-05-04	11/6/2019	0.02	**<0.10**	1.5	4.68	8.16	-85.5
SWMU-17	BDC-05-04	5/6/2020	0.58	**<0.10**	0.0	0.197	5.15	1.7
SWMU-17	BDC-05-04	11/6/2020	3.18	**<0.10**	1.5	0.844	5.8	-76.2
SWMU-17	BDC-05-04	5/5/2021	0.43	**<0.50**	2.5	5.24	7.5	-112.6
SWMU-17	BDC-05-04	11/3/2021	0.64	**<0.10**	5.0	1.06	6.6	-86.3
SWMU-17	BDC-05-04	5/10/2022	6.64	**<0.10**	1.5	1.82	4.3	-84.9
SWMU-17	BDC-05-04	11/9/2022	0.55	**<0.10**	3.5	6.72	3.9	29.5
SWMU-20	MW-17A	05/15/2006		**1.37**	0.0	27.0		
SWMU-20	MW-17A	11/12/2009		**0.9**				
SWMU-20	MW-17A	5/17/2010		**1.6**	0.2	21.0		
SWMU-20	MW-17A	11/8/2010		**0.1**	2.1	15.7		
SWMU-20	MW-17A	5/3/2011		**1.6**	0.0	19.8		
SWMU-20	MW-17A	8/1/2011		**0.5**	0.0	20.5		
SWMU-20	MW-17A	11/1/2011		**0.3**	0.0	23.2		
SWMU-20	MW-17A	5/3/2012		**4.4**	0.0			
SWMU-20	MW-17A	9/4/2012		**2.0**		26.8		
SWMU-20	MW-17A	11/13/2012		**0.59**	0.0	22.9		
SWMU-20	MW-17A	5/20/2013		**2.9**		26.8		
SWMU-20	MW-17A	11/19/2013		**1.3**	0.4	23.9		
SWMU-20	MW-17A	5/6/2014		**2.2**	0.0	23.7		
SWMU-20	MW-17A	11/4/2014		**0.16**	0.4	26.0		
SWMU-20	MW-17A	4/28/2015		**1.6**	0.0	26.3		

Table 2
AOC-05 Nitrate Concentrations at Downgradient Monitoring Locations
Boeing Developmental Center
Tukwila, Washington

			Aquifer Redox Conditions					
Area	Well	Date	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)
SWMU-20	MW-17A	10/26/2015	0.17	**0.91**	0.0	29.0		-11.1
SWMU-20	MW-17A	4/13/2016	0.31	**1.7**	1.8	0.90		-175
SWMU-20	MW-17A	11/1/2016	0.41	**<0.10**	1.4			-215.9
SWMU-20	MW-17A	5/3/2017	0.62	**<0.10**	2.2			-225
SWMU-20	MW-17A	11/7/2017	0.57	**<0.10**	1.8	<0.30		23.8
SWMU-20	MW-17A	5/1/2018	0.19	**<0.5**	2.4	<0.5		-127.4
SWMU-20	MW-17A	11/5/2018	0.41	**<1.0**	1.5	<0.2		-189.8
SWMU-20	MW-17A	5/1/2019	0.56	**<0.10**	1.0	0.732		-176.0
SWMU-20	MW-17A	11/5/2019	1.65	**0.741**	3.0	2.91		-89.1
SWMU-20	MW-17A	5/4/2020	0.61	**<0.10**	1.5	0.145		-159.9
SWMU-20	MW-17A	11/4/2020	1.93	**<0.10**	2.0	0.141		-196.0
SWMU-20	MW-17A	5/4/2021	1.23	**<0.50**	0.0	<0.5		-164.3
SWMU-20	MW-17A	11/2/2021	0.46	**<0.10**	7.0	0.313		-85.9
SWMU-20	MW-17A	5/9/2022	1.76	**<0.10**	7.0	<0.1		-18.8
SWMU-20	MW-17A	11/8/2022	0.21	**<0.10**	4.3	<0.1		32.5
SWMU-20	MW-18A	05/15/2006		**0.154**	0.4	64.8		
SWMU-20	MW-18A	11/12/2009		**0.8**				
SWMU-20	MW-18A	05/17/2010		**1.0**	0.4	32.2		
SWMU-20	MW-18A	11/08/2010		**0.1**	0.0	14.2		
SWMU-20	MW-18A	5/3/2011		**<0.1**	0.0	31.5		
SWMU-20	MW-18A	8/1/2011		**1.1**	0.0	42.2		
SWMU-20	MW-18A	11/1/2011		**0.7**	0.0	93.3		
SWMU-20	MW-18A	5/3/2012		**<0.10**	0.0			
SWMU-20	MW-18A	9/4/2012		**<0.10**		19.5		
SWMU-20	MW-18A	11/13/2012		**<0.10**	0.0	21.5		
SWMU-20	MW-18A	5/20/2013		**<0.10**		19.6		
SWMU-20	MW-18A	11/19/2013		**<0.10**	0.6	15.0		
SWMU-20	MW-18A	5/6/2014		**<0.10**	0.0	26.1		
SWMU-20	MW-18A	11/4/2014		**<0.10**	0.4	21.0		
SWMU-20	MW-18A	4/28/2015		**0.11**	0.0	19.1		
SWMU-20	MW-18A	10/26/2015	0.10	**<0.10**	0.6	23.4		-7.1
SWMU-20	MW-18A	4/13/2016	0.76	**0.10**	0.0	42.8		38
SWMU-20	MW-18A	11/1/2016	0.26	**<0.10**	0.4			-8.5
SWMU-20	MW-18A	5/3/2017	1.22	**0.26**	0.0			63.7
SWMU-20	MW-18A	11/7/2017	0.55	**<0.10**	0.0	14.2		7.0
SWMU-20	MW-18A	5/1/2018	0.83	**<0.10**	0.0	36.8		-15.6
SWMU-20	MW-18A	11/5/2018	0.49	**<0.10**	0.0	13.3		25.1
SWMU-20	MW-18A	5/1/2019	0.54	**<0.10**	0.0	17.6		45.8
SWMU-20	MW-18A	11/5/2019	0.29	**<0.10**	1.0	11.5		5.4
SWMU-20	MW-18A	5/4/2020	0.84	**<0.10**	0.0	12.2		30.8
SWMU-20	MW-18A	11/5/2020	0.79	**<0.10**	0.8	6.50		46.5
SWMU-20	MW-18A	5/4/2021	0.93	**<0.10**	0.0	14.4		32.9
SWMU-20	MW-18A	11/2/2021	0.84	**<0.10**	2.5	2.67		85.6
SWMU-20	MW-18A	5/9/2022	5.99	**<0.10**	0.5	5.82		22.5
SWMU-20	MW-18A	11/8/2022	0.39	**<0.10**	5.0	2.42		38.9
SWMU-20	MW-21A	05/15/2006		**0.136**	0.4	54.9		
SWMU-20	MW-21A	11/12/2009		**<0.1**				
SWMU-20	MW-21A	05/17/2010		**0.2**	0.0	11.9		
SWMU-20	MW-21A	11/08/2010		**<0.1**	0.0	5.9		
SWMU-20	MW-21A	5/3/2011		**0.2**	0.0	52.1		
SWMU-20	MW-21A	8/1/2011		**0.1**	0.0	26.7		
SWMU-20	MW-21A	11/1/2011		**<0.1**	0.0	9.3		
SWMU-20	MW-21A	5/3/2012		**0.17**	0.0			
SWMU-20	MW-21A	9/4/2012		**<0.10**		6.7		
SWMU-20	MW-21A	11/13/2012		**0.16**	0.0	18.5		
SWMU-20	MW-21A	5/20/2013		**0.10**	0.5	13.5		

Table 2
AOC-05 Nitrate Concentrations at Downgradient Monitoring Locations
Boeing Developmental Center
Tukwila, Washington

Area	Well	Date	Aquifer Redox Conditions					
			DO (mg/L)	**Nitrate-Nitrogen (mg/L)**	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)
SWMU-20	MW-21A	11/19/2013		**<0.10**	0.0	15.6		
SWMU-20	MW-21A	5/6/2014		**<0.10**	0.0	7.6		
SWMU-20	MW-21A	11/4/2014		**<0.10**	0.0	5.1		
SWMU-20	MW-21A	4/28/2015		**<0.10**	0.0	5.3		
SWMU-20	MW-21A	10/26/2015	0.33	**0.11**	0.0	3.9		10.3
SWMU-20	MW-21A	4/13/2016	2.08	**<0.10**	0.0	4.9		56
SWMU-20	MW-21A	11/1/2016	1.71	**0.10**	0.2			78
SWMU-20	MW-21A	5/3/2017	3.41	**0.19**	0.0			99.8
SWMU-20	MW-21A	11/7/2017	0.88	**<0.10**	0.0	11.0		44.2
SWMU-20	MW-21A	5/1/2018	3.49	**<0.10**	0.0	7.53		80.7
SWMU-20	MW-21A	11/5/2018	0.96	**<0.10**	0.0	4.88		141.9
SWMU-20	MW-21A	5/1/2019	1.92	**0.125**	0.0	11.4		93.7
SWMU-20	MW-21A	11/5/2019	6.22	**<0.10**	0.0	4.35		33.7
SWMU-20	MW-21A	5/4/2020	1.75	**<0.10**	0.0	7.81		-4.1
SWMU-20	MW-21A	11/5/2020	1.68	**<0.10**	0.0	8.88		47.3
SWMU-20	MW-21A	5/4/2021	1.85	**<0.10**	0.0	6.46		66.2
SWMU-20	MW-21A	11/2/2021	0.61	**<0.10**	0.0	8.94		80.7
SWMU-20	MW-21A	5/9/2022	0.76	**<0.10**	0.0	7.84		85.0
SWMU-20	MW-21A	11/8/2022	0.66	**<0.10**	0.0	6.98		24.9

Abbreviations and Acronyms:

DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
ORP = oxidation-reduction potential

Notes:

Nitrate-nitrogen column **bolded** for emphasis of target compound. Other results included for aquifer redox evaluation.
= not analyzed

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-02	5/21/2007	-526			20	24	1.2	<1.0				0.003	0.002	0.004	<0.002									0.38	0.58	0.04	0.00	
(IW 2011, 2017)	11/26/2007	-337			12	14	1.3	<1.0				0.001	<0.001	<0.002	<0.002									0.38	0.55	0.07	0.00	
	5/22/2008	-159			14	20	1.2	<0.2				0.002	<0.001	0.004	<0.002									0.34	0.61	0.05	0.00	
BDC-05-02	10/23/2008	-5			31	62	2.9	<1.0	<1.1	<1.2	<1.1	0.003	0.003	0.006	<0.002	5.15	0.4	0.2	13.0	0.19	87.1	5.5	6.47	0.27	0.69	0.04	0.00	0.00
BDC-05-02	11/20/2008	23			5.1	4.2	0.7	<0.2	<1.1	<1.2	<1.1	0.017	0.011	0.008	<0.002	0.29	<0.1	1.8	64.8	3.3	-111	430	6.47	0.44	0.46	0.10	0.00	0.00
BDC-05-02	12/16/2008	49			6.6	7.3	1.3	<1.0	<1.1	<1.2	<1.1	0.024	0.017	0.030	0.003	1.28	<0.1	3.4	88.8	2.9	-225	610	6.41	0.37	0.51	0.12	0.00	0.00
BDC-05-02	1/16/2009	80			7.5	22	3.7	<1.0	<1.1	<1.2	<1.1	0.022	0.014	0.029	<0.002	0.09	<1.0	3.5	6.9	6.2	-304	732	6.10	0.18	0.67	0.15	0.00	0.00
BDC-05-02	2/11/2009	106			9.5	17	12	<1.0	<1.1	<1.2	<1.1	0.046	0.040	0.004	<0.002	2.36	<0.1	4.0	<0.1	13.2	-99	433	6.32	0.18	0.42	0.40	0.00	0.00
BDC-05-02	3/9/2009	132			9.1	8.1	25	<1.0	<1.1	<1.2	<1.1	0.041	0.036	0.004	<0.002	0.09	<1.0	3.5	<1.0	22.9	-102	317	6.43	0.15	0.16	0.69	0.00	0.00
BDC-05-02	4/16/2009	170			7.3	6.0	41	<1.0	<1.1	<1.2	<1.1	0.029	0.025	0.003	<0.002	1.78	<0.1	3.0	<0.5	26.3	-97	274	6.59	0.09	0.09	0.83	0.00	0.00
BDC-05-02	5/13/2009	197			4.4	4.6	35	1.4	<1.1	<1.2		0.024	0.019	0.004	<0.002	0.27	<0.1	5.2	<0.1	23.0	-63	215	6.61	0.06	0.08	0.81	0.05	0.00
BDC-05-02	8/16/2009	292			1.8	1.1	49	<1.0	<1.1	<1.2	<1.1	0.023	0.017	0.009	<0.002	1.58	<0.5	3.6	<0.5	22.6	-23	125	6.77	0.02	0.02	0.96	0.00	0.00
BDC-05-02	11/13/2009	381			1.0	<1.0	70	<1.0	<1.1	<1.2	<1.1	0.020	0.016	0.003	<0.002	1.07	<0.1	2.8	0.3	21.1	-26	44.1	6.05	0.01	0.00	0.99	0.00	0.00
BDC-05-02	2/16/2010	476			<1.0	<1.0	54	<1.0	<1.1	<1.2	<1.1	0.022	0.020	0.005	0.002	1.52	<0.5	2.0	0.5	22.5	763	86.7	6.87	0.00	0.00	1.00	0.00	0.00
BDC-05-02	5/18/2010	567			<1.0	1.0	32	<1.0	<1.1	<1.2	<1.1	0.013	0.012	<0.002	<0.002	1.83	<0.5	2.3	<0.5	18.4	515	20.6	6.69	0.00	0.02	0.98	0.00	0.00
BDC-05-02	8/17/2010	658			<1.0	<1.0	23	<1.0	<1.1	<1.2	<1.1	0.010	0.008	<0.002	<0.002	2.82	0.2	2.7	1.4	20.2	55	13.3	6.74	0.00	0.00	1.00	0.00	0.00
BDC-05-02	11/9/2010	742			<1.0	<1.0	14	<1.0	<1.1	<1.2	<1.1	0.006	0.005	<0.002	<0.002	2.77	<0.1	2.2	0.3	16.9	72	10.8	6.83	0.00	0.00	1.00	0.00	0.00
BDC-05-02	2/15/2011	840			<1.0	<1.0	13	<1.0	<1.1	<1.2	<1.1	0.007	0.006	0.003	<0.002	2.43	<0.1	3.0	0.7	17.8	114	13.2	6.80	0.00	0.00	1.00	0.00	0.00
BDC-05-02	5/2/2011	916			0.6	0.9	22	0.3	<1.1	<1.2	<1.1	0.008	0.007	<0.002	<0.002	2.09	<0.1	1.4	0.2	13.3	13	9.8	6.86	0.01	0.03	0.94	0.02	0.00
BDC-05-02	7/31/2011	1006	-18		<1.0	<1.0	10	<1.0	<1.1	<1.2	<1.1	0.006	0.005	<0.002	<0.002	1.97	<0.1	3.2	0.2	15.0	-35	8.7	6.82	0.00	0.00	1.00	0.00	0.00
BDC-05-02	11/2/2011	1100	76		8.4	4.8	150	1.6	<1.1	<1.2	<1.1	0.025	0.022	0.010	0.010	2.40	<0.1	3.5	1.4	9.0	-28	5360	5.43	0.03	0.02	0.93	0.02	0.00
BDC-05-02	2/19/2012	1209	185		<4.0	<4.0	220	<4.0	<1.0	<1.0	<1.0					1.37	<0.5	1.3	<1.5	8.5	-32	673	6.70	0.00	0.00	1.00	0.00	0.00
BDC-05-02	5/7/2012	1287	263		<2.0	<2.0	180	<2.0	<1.0	<1.0	<1.0	0.051	0.049	0.004	<0.002	0.60		2.2	0.8	19.0	35	412	6.71	0.00	0.00	1.00	0.00	0.00
BDC-05-02	9/5/2012	1408	384		<2.0	<2.0	57	<2.0	<1.0	<1.0	<1.0					0.11		1.8	<0.3	10.0	71	116	6.45	0.00	0.00	1.00	0.00	0.00
BDC-05-02	11/15/2012	1479	455		<2.0	<2.0	32	5.5	<1.0	<1.0	<1.0	0.014	0.013	<0.003	<0.002	0.03		1.2	<0.3	20.0	17	106	6.49	0.00	0.00	0.79	0.21	0.00
BDC-05-02	2/26/2013	1582	558		<1.0	<1.0	1.2	2.7	1.4	<1.0	<1.0					0.12		1.2	<0.30	17.0	45	32.2	6.66	0.00	0.00	0.12	0.41	0.47
BDC-05-02	5/22/2013	1667	643		0.3	0.5	0.7	0.6	<1.0	<1.0	<1.0	0.006	0.005	0.002	<0.002	0.21		1.0	0.57	15.0	-316	19.3	7.74	0.08	0.17	0.32	0.43	0.00
BDC-05-02	8/29/2013	1766	742		0.3	0.4	0.6	0.2	<1.0	<1.0	<1.0					1.96		1.4	<0.30	14.0	-303	15.7	6.34	0.13	0.21	0.43	0.22	0.00
BDC-05-02	11/13/2013	1842	818		0.4	0.5	0.9	0.6	<1.0	<1.0	<1.0	0.008	0.007	0.003	<0.002	2.52		1.8	<0.30	14.0	-272	26.8	6.42	0.10	0.15	0.37	0.38	0.00
BDC-05-02	2/11/2014	1932	908		0.8	<0.2	<0.2	<0.2	<1.0	<3.0	<1.0					4.01		2.8	<0.30	12.0	-235	7.1	6.75	1.00	0.00	0.00	0.00	0.00
BDC-05-02	5/13/2014	2023	999		0.8	1.1	1.5	2.4	5.1	<1.0	<1.0	0.023	0.019	0.003	<0.002	4.23		1.8	5.7	15.0	-380	66.5	6.62	0.02	0.03	0.06	0.15	0.73
BDC-05-02	8/6/2014	2108	1084		<1.0	<1.0	<1.0	4.1	40	11	<1.0					7.61		1.5	3.6	17.0	-215	93.4	7.20	0.00	0.00	0.00	0.04	0.96
BDC-05-02	11/11/2014	2205	1181		1.5	0.7	2.3	0.6	<1.0	12	<1.0	0.039	0.032	0.003	<0.002	0.05		1.0	1.2	13.0	-80	38.2	6.22	0.02	0.01	0.05	0.02	0.89
BDC-05-02	1/21/2015	2276	1252		1.2	0.6	1.7	1.7	<1.0	4.7	<1.0					0.16		0.6	8.9	12.0	-135	40	6.36	0.03	0.02	0.08	0.13	0.73
BDC-05-02	4/27/2015	2372	1348		2.7	1.1	1.2	3.4	3.0	6.4	<1.0	0.018	0.011	0.004	<0.002	0.07		2.0	14.3	9.8	-63	15.9	6.39	0.04	0.02	0.03	0.13	0.78
BDC-05-02	7/20/2015	2456	1432		1.8	1.4	0.7	0.7	<1.0	11	<1.0					0.15		1.9	9.5	8.0	-67	15.3	6.36	0.03	0.03	0.02	0.03	0.90
BDC-05-02	10/28/2015	2556	1532		0.8	<0.2	0.6	0.4	<1.0	<1.0	<1.0	0.002	0.002	0.006	<0.002	0.21		0.8	0.70	9.2	-5.7	3.8	6.29	0.28	0.00	0.36	0.37	0.00
BDC-05-02	1/26/2016	2646	1622		4.9	1.7	1.4	1.8	2.1	5.5	<1.0					0.22		1.4	23.7	10.0	-28	20.9	6.40	0.09	0.04	0.04	0.08	0.75
BDC-05-02	4/20/2016	2731	1707		4.2	1.4	0.8	0.6	<1.0	4.4	<1.0	0.005	0.002	0.008	0.004	0.09		1.8	14.5	8.8	-9.8	13.6	6.26	0.13	0.05	0.04	0.05	0.73
BDC-05-02	8/9/2016	2842	1818		1.6	1.6	0.3	<0.2	<1.0	4.9	<1.0	0.021	0.011	<0.002	<0.002	0.50		1.4	3.8	12.0	-101.3	14.4	6.28	0.05	0.06	0.02	0.00	0.87
BDC-05-02	11/2/2016	2927	1903		1.7	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	0.003	0.002	<0.002	<0.002	0.50		0.6	<0.30	10.0	-83.5	6.0	6.42	1.00	0.00	0.00	0.00	0.00
BDC-05-02	2/7/2017	3024	2000		2.1	1.6	0.5	0.5	1.2	5.4	<1.0	0.004	0.002	0.002	<0.002	0.40		2.4	18.8	9.6	-72.5	10.7	6.65	0.05	0.05	0.02	0.03	0.85
BDC-05-02	5/4/2017	3110	2086		4.2	2.0	0.4	0.4	<1.0	3.6	<1.0	0.002	0.001	0.007	0.004	0.48		0.8	23.2	5.0	27.5	15.6	6.34	0.15	0.09	0.02	0.04	0.70
BDC-05-02	8/1/2017	3199	2175		3.9	2.5	0.3	<0.2	<1.0	8.2	<1.0	0.012	0.009	<0.002	<0.002	0.13		1.6	18.4	8.0	-14.1	12.3	6.07	0.07	0.06	0.01	0.00	0.86
BDC-05-02	11/6/2017	3296	2272	-4	1.3	3.6	0.3	<0.2	<1.0	3.5	<1.0	0.013	0.011	<0.002	<0.002	1.12		1.8	13.0	10.0	-5.0	10.5	6.53	0.05	0.18	0.02	0.00	0.75
BDC-05-02	5/2/2018	3473	2449	173	3.7	3.75	15.4	1.83	<1.14	<1.23	<1.06	0.039	0.035	<0.050	<0.050	0.66		8.6	135	10.2	3.2	9629	5.16	0.09	0.12	0.66	0.12	0.00
BDC-05-02	11/6/2018	3661	2637	361	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	<1.06	0.044	0.033	0.035	<0.010	2.08		1.2	<1.0	9.3	-179.4	1723	6.75	NA	NA	NA	NA	NA
BDC-05-02	5/3/2019	3839	2815	539	0.41	0.21	1.10	<0.2	<1.14	<1.23	<1.06	0.041	0.036	0.018	<0.010	1.09			6.21	15.7	-156.7	1360	6.64	0.16	0.10	0.74	0.00	0.00
BDC-05-02	11/6/2019	4026	3002	726	<0.2	<0.2	0.70	<0.2	<1.14	<1.23	<1.06	0.025	0.025	0.016	<0.010	1.29		0.0	1.52	4.35	-48.1	1233	6.71	0.00	0.00	1.00	0.00	0.00
BDC-05-02	5/6/2020	4208	3184	908	0.24	<0.2	0.40	<0.2	<1.14	<1.23	<1.06	0.028	0.026	0.017	0.001	2.35		0.0	2.09	12.6	-76.3	1103	6.61	0.26	0.00	0.74	0.00	0.00
BDC-05-02	11/5/2020	4391	3367	1091	0.56	<0.2	0.73	<0.2	<1.14	<1.23	<1.06	0.021	0.016	0.028	<0.010	1.83		2.5	0.88	11.9	-159.6	894	6.53	0.31	0.00	0.69	0.00	0.00
BDC-05-02	5/5/2021	4572	3548	1272	0.52	0.98	0.54	<0.20	<1.14	<1.23	<1.06	0.010	0.009	0.027	0.003	0.29		3.0	25.7	7.6	-153.7	484.4	6.69	0.19	0.46	0.34	0.00	0.00
BDC-05-02	11/3/2021	4754	3730	1454	0.45	<0.20	0.57	<0.20	<1.14	<1.23	<1.06	0.015	0.011	0.032	0.001	0.02		7.0	2.2	9.27	6.6	604	6.83	0.32	0.00	0.68	0.00	0.00
BDC-05-02	5/10/2022	4942	3918	1642	0.93	0.59	0.30	<0.20	<1.14	<1.23	<1.06	0.008	0.006	0.041	0.022	7.63		0.0	74.4	5.02	-55.0	141.2	6.53	0.43	0.34	0.23	0.00	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-02	11/9/2022	5125	4101	1825	1.48	0.82	0.32	<0.20	<1.14	<1.23	<1.06	0.015	0.013	0.023	<0.010	0.26		3.0	30.1	5.71	23.8	237.0	6.84	0.48	0.34	0.18	0.00	0.00
BDC-05-03	5/21/2007	-526			3.5	8.1	11	<1.0				0.003	<0.001	0.004	<0.002									0.11	0.31	0.58	0.00	
(IW 2017)	11/26/2007	-337			2.3	4.4	7.2	<1.0				0.002	<0.001	0.003	<0.002									0.11	0.28	0.61	0.00	
	5/22/2008	-159			3.8	8.5	13	<0.2				0.002	<0.001	0.003	<0.002									0.10	0.29	0.60	0.00	
BDC-05-03	10/23/2008	-5			4.2	8.2	17	<0.2	<1.1	<1.2	<1.1	0.004	0.002	0.004	0.002	0.37	<0.1	0.1	4.9	2.1	48.9	4.9	6.23	0.10	0.24	0.67	0.00	0.00
BDC-05-03	11/20/2008	23			1.8	2.1	2.7	<0.2	<1.1	<1.2	<1.1	0.003	0.001	0.004	<0.002	2.07	0.9	1.6	8.5	3.6	-8	7.0	6.23	0.20	0.29	0.51	0.00	0.00
BDC-05-03	12/16/2008	49			2.2	4.1	5.8	<1.0	<1.1	<1.2	<1.1	0.001	<0.001	0.002	<0.002	1.20	0.4	2.4	20.1	4.7	-67	5.4	6.44	0.13	0.30	0.57	0.00	0.00
BDC-05-03	1/16/2009	80			1.5	1.2	<1.0	<1.0	<1.1	<1.2	<1.1	0.001	<0.001	0.002	<0.002	0.71	1.7	0.4	10.3	1.5 J	-144	3.2	6.17	0.50	0.50	0.00	0.00	0.00
BDC-05-03	2/11/2009	106			1.8	3.2	4.4	<1.0	<1.1	<1.2	<1.1	0.002	<0.001	0.002	<0.002	2.43	0.9	2.4	6.2	5.4	-60	5.4	6.59	0.13	0.30	0.56	0.00	0.00
BDC-05-03	3/9/2009	132			1.3	1.7	1.4	<1.0	<1.1	<1.2	<1.1	<0.001	<0.001	<0.002	<0.002	0.86	1.0	1.0	6.6	4.3	39	4.8	6.48	0.22	0.37	0.41	0.00	0.00
BDC-05-03	4/16/2009	170			1.5	2.2	2.8	<1.0	<1.1	<1.2	<1.1	0.001	0.002	<0.002	<0.002	1.42	1.0	1.4	4.8	3.3	14	5.4	6.69	0.17	0.31	0.53	0.00	0.00
BDC-05-03	5/13/2009	197			1.2	2.1	3.4	<1.0	<1.1	<1.2		0.001	0.0004	0.004	0.002	1.06	1.0	3.0	4.8	6.9	31	5.5	6.75	0.12	0.27	0.60	0.00	0.00
BDC-05-03	8/16/2009	292			2.2	4.3	8.1	<1.0	<1.1	<1.2	<1.1	0.001	0.001	<0.002	<0.002	0.85	0.1	3.0	3.0	8.3	-42	6.5	7.11	0.10	0.25	0.64	0.00	0.00
BDC-05-03	11/13/2009	381			1.2	1.2	<1.0	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.003	<0.002	1.66	0.2	3.0	5.6	5.0	57	4.3	6.37	0.44	0.56	0.00	0.00	0.00
BDC-05-03	2/16/2010	476			1.4	1.0	<1.0	<1.0	<1.1	<1.2	<1.1	0.002	<0.001	0.005	0.005	1.25	2.5	0.0	8.6	<0.0007	663	3.5	6.30	0.53	0.47	0.00	0.00	0.00
BDC-05-03	5/18/2010	567			1.2	1.8	2.7	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.004	0.003	0.88	1.5	2.0	4.9	2.4	346	4.7	6.42	0.15	0.28	0.57	0.00	0.00
BDC-05-03	8/17/2010	658			2.3	5.2	14	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.003	<0.002	2.10	0.2	2.7	2.8	7.1	73	7.6	6.79	0.07	0.20	0.73	0.00	0.00
BDC-05-03	11/9/2010	742			1.4	1.7	3.7	<1.0	<1.1	<1.2	<1.1	0.001	0.001	0.003	<0.002	3.20	0.5	2.2	5.3	3.0	133	4.7	7.61	0.14	0.22	0.64	0.00	0.00
BDC-05-03	2/15/2011	840			1.3	<1.0	2.3	<1.0	<1.1	<1.2	<1.1	0.001	0.0003	0.005	0.003	2.86	0.7	0.0	6.2	4.6	166	5.4	7.01	0.25	0.00	0.75	0.00	0.00
BDC-05-03	5/2/2011	916	-108		1.7	1.0	0.2	<0.2	<1.1	<1.2	<1.1	0.002	0.0004	0.005	0.003	3.31	0.8	0.0	5.5	0.3	203	4.1	6.91	0.51	0.38	0.10	0.00	0.00
BDC-05-03	11/2/2011	1100	76		1.4	1.6	20	2.0				0.018	0.017	0.004	0.002	1.20	<0.1	1.6	<1.0		-60	70.0	6.72	0.03	0.05	0.80	0.12	
BDC-05-03	5/6/2012	1286	262		0.6	1.3	<0.2	0.3				0.002	0.004	0.003	0.010	0.02		1.2	10.3		82	4.9	6.26	0.20	0.54	0.00	0.26	
BDC-05-03	11/13/2012	1477	453		<0.5	<0.5	<0.5	0.7				0.008	0.007	0.003	<0.002	0.01		0.3	1.2		13	8.3	6.79	0.00	0.00	0.00	1.00	
BDC-05-03	5/22/2013	1667	643		0.4	0.5	0.4	1.1				0.004	0.003	<0.002	<0.002	0.23		0.8	2.7		-264	6.6	7.57	0.09	0.14	0.15	0.63	
BDC-05-03	11/13/2013	1842	818		1.3	1.2	0.2	<0.2	<1.0	<1.0	<1.0	0.008	0.001	0.003	<0.002	3.19		1.6	10.5	0.45	-272	4.3	6.24	0.41	0.48	0.11	0.00	0.00
BDC-05-03	5/13/2014	2023	999		1.5	0.7	<0.2	<0.2	<1.0	1.1	<1.0	0.003	<0.001	0.002	<0.002	4.08		1.4	9.6	1.00	-206	5.4	6.30	0.18	0.10	0.00	0.00	0.72
BDC-05-03	11/10/2014	2204	1180		2.1	0.6	<0.2	<0.2	<1.0	<1.0	<1.0	0.002	0.001	0.003	<0.002	0.07		0.8	5.6	0.07	81	1.1	5.72	0.73	0.27	0.00	0.00	0.00
BDC-05-03	4/27/2015	2372	1348		1.5	0.4	<0.2	0.4	<1.0	<1.0	<1.0	0.002	0.003	0.004	<0.002	0.93		0.6	4.1	0.74	43	1.7	5.85	0.49	0.16	0.00	0.35	0.00
BDC-05-03	10/28/2015	2556	1532		0.6	0.4	<0.2	0.3	<1.0	1.1	<1.0	0.012	0.006	0.009	0.002	0.09		1.0	1.2	5.9	-13	6.5	6.40	0.08	0.06	0.00	0.10	0.76
BDC-05-03	4/20/2016	2731	1707		1.2	0.2	<0.2	<0.2	<1.0	<1.0	<1.0	0.002	0.002	0.003	<0.002	0.58			6.5	2.8	41	1.4	5.97	0.83	0.17	0.00	0.00	0.00
BDC-05-03	11/3/2016	2928	1904		1.4	0.3	<0.2	<0.2	<1.0	<1.0	<1.0	0.007	0.006	<0.002	<0.002	0.77		3.0	7.7	0.31	5.4	2.3	5.91	0.79	0.21	0.00	0.00	0.00
BDC-05-03	5/4/2017	3110	2086		1.4	0.3	<0.2	<0.2	<1.0	<1.0	<1.0	0.003	<0.0004	0.003	<0.002	1.95		0.0	7.2	<3.0	72.5	2.8	5.63	0.79	0.21	0.00	0.00	0.00
BDC-05-03	11/6/2017	3296	2272	-4	0.2	<0.2	<0.2	0.3	<1.0	3.4	<1.0	0.012	0.009	0.005	<0.002	0.22		3.6	<0.30	10.0	20.3	7.3	6.28	0.01	0.00	0.00	0.04	0.95
BDC-05-03	5/2/2018	3473	2449	173	<2.0	<2.0	2.49	<2.0	<1.14	<1.23	<1.06	0.027	0.019	<0.050	<0.050	0.65		7.8	<1.0	9.07	1.2	4463	5.45	0.00	0.00	1.00	0.00	0.00
BDC-05-03	11/6/2018	3661	2637	361	<2.0	<2.0	5.27	<2.0	<1.14	<1.23	<1.06	0.029	0.018	0.046	0.004	1.30		1.2	0.616	10.5	-162	940.8	6.70	0.00	0.00	1.00	0.00	0.00
BDC-05-03	5/2/2019	3838	2814	538	<0.2	0.22	4.08	1.86	<1.14	<1.23	<1.06	0.034	0.026	0.045	0.008	0.28		7.0	<0.50	10.1	-136.4	573.5	6.32	0.00	0.02	0.57	0.40	0.00
BDC-05-03	11/6/2019	4026	3002	726	<0.2	<0.2	0.87	2.56	<1.14	<1.23	<1.06	0.016	0.010	0.039	0.004	0.49		3.0	0.361	10.6	-5.1	432.6	6.58	0.00	0.00	0.18	0.82	0.00
BDC-05-03	5/6/2020	4208	3184	908	<0.2	<0.2	0.57	1.77	<1.14	<1.23	<1.06	0.026	0.018	0.039	0.004	0.56		2.0	0.773	9.3	-61.2	357.6	6.49	0.00	0.00	0.17	0.83	0.00
BDC-05-03	11/6/2020	4392	3368	1092	<0.2	<0.2	0.32	0.93	<1.14	<1.23	<1.06	0.017	0.011	0.057	0.006	0.60		3.0	1.06	10.6	-127.6	250.7	6.58	0.00	0.00	0.18	0.82	0.00
BDC-05-03	5/6/2021	4573	3549	1273	<0.20	<0.20	0.39	0.74	<1.14	<1.23	<1.06	0.021	0.014	0.053	0.003	0.37		1.5	5.28	11.1	-115.4	129.0	6.56	0.00	0.00	0.25	0.75	0.00
BDC-05-03	11/5/2021	4756	3732	1456	<0.20	<0.20	0.23	0.53	<1.14	2.76	<1.06	0.017	0.011	0.084	0.005	0.51		4.8	10.8	6.1	-94.5	80.8	6.47	0.00	0.00	0.02	0.08	0.89
BDC-05-03	5/10/2022	4942	3918	1642	<0.20	<0.20	<0.20	0.35	<1.14	<1.23	<1.06	0.009	0.007	0.030	0.012	7.76		3.0	30.2	4.2	42.0	19.6	6.02	0.00	0.00	0.00	1.00	0.00
BDC-05-03	11/9/2022	5125	4101	1825	<0.20	0.24	0.24	0.70	<1.14	<1.23	<1.06	0.038	0.029	0.083	0.009	0.29		3.3	11.2	5.3	36.0	55.0	6.45	0.00	0.12	0.16	0.72	0.00
BDC-05-04	5/21/2007	-526			<1.0	<1.0	1.4	<1.0				0.018	<0.001	<0.002	<0.002									0.00	0.00	1.00	0.00	
(IW 2017)	11/26/2007	-337			<1.0	<1.0	1.6	<1.0				0.009	<0.001	<0.002	<0.002									0.00	0.00	1.00	0.00	
	5/22/2008	-159			1.5	0.9	1.2	<0.2				0.018	<0.001	<0.002	<0.002									0.32	0.24	0.44	0.00	
BDC-05-04	10/23/2008	-5			1.1	0.8	2.1	<0.2	<1.1	<1.2	<1.1	0.009	<0.001	<0.002	<0.002	2.45	7.6	0.1	31.0	0.3	73.5	3.8	6.33	0.19	0.18	0.63	0.00	0.00
BDC-05-04	11/20/2008	23			1.1	0.7	3.6	<0.2	<1.1	<1.2	<1.1	0.019	<0.001	<0.002	<0.002	0.59	4.5	0.8	25.2	0.05	-16	5.1	6.25	0.14	0.11	0.76	0.00	0.00
BDC-05-04	12/16/2008	49			<1.0	<1.0	2.4	<1.0	<1.1	<1.2	<1.1	0.019	0.002	0.003	<0.002	0.55	5.5	1.0	30.4	1.6	-98	6.9	6.24	0.00	0.00	1.00	0.00	0.00
BDC-05-04	1/16/2009	80			<1.0	<1.0	2.0	<1.0	<1.1	<1.2	<1.1	0.017	<0.001	<0.002	<0.002	0.06	4.3	1.0	21.8	1.5	-192	5.1	6.23	0.00	0.00	1.00	0.00	0.00
BDC-05-04	2/11/2009	106			1.0	<1.0	1.5	<1.0	<1.1	<1.2	<1.1	0.020	<0.001	<0.002	<0.002	2.45	5.9	1.0	31.8	1.1	-54	6.8	6.17	0.28	0.00	0.72	0.00	0.00
BDC-05-04	3/9/2009	132			1.0	<1.0	1.3	<1.0	<1.1	<1.2	<1.1	0.014	0.001	0.002	<0.002	0.27	4.8	1.5	30.1	0.2	35	5.2	6.22	0.31	0.00	0.69	0.00	0.00
BDC-05-04	4/16/2009	170			1.2	<1.0	<1.0	<1.0	<1.1	<1.2	<1.1	0.011	0.001	<0.002	<0.002	1.48	5.9	1.4	33.6	<0.0007	68	5.7	6.29	1.00	0.00	0.00	0.00	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-04	5/13/2009	197			<1.0	<1.0	1.0	<1.0	<1.1	<1.2		0.007	0.001	0.002	0.002	0.33	4.5	1.6	26.6	0.4	49	5.2	6.37	0.00	0.00	1.00	0.00	0.00
BDC-05-04	8/16/2009	292			1.3	<1.0	<1.0	<1.0	<1.1	<1.2	<1.1	0.012	0.001	0.002	<0.002	0.86	5.4	2.2	30.6	<0.0007	93	5.0	6.97	1.00	0.00	0.00	0.00	0.00
BDC-05-04	11/13/2009	381			<1.0	<1.0	1.2	<1.0	<1.1	<1.2	<1.1	0.005	0.001	<0.002	<0.002	0.56	2.2	3.0	18.4	2.4	109	4.4	5.86	0.00	0.00	1.00	0.00	0.00
BDC-05-04	2/16/2010	476			<1.0	<1.0	1.1	<1.0	<1.1	<1.2	<1.1	0.004	0.002	0.012	0.002	0.88	<0.1	3.3	24.6	1.5	899	8.9	6.24	0.00	0.00	1.00	0.00	0.00
BDC-05-04	5/18/2010	567			1.1	<1.0	1.2	<1.0	<1.1	<1.2	<1.1	0.014	0.001	0.005	<0.002	0.75	<0.1	3.0	25.4	1.3	473	7.1	6.19	0.35	0.00	0.65	0.00	0.00
BDC-05-04	8/17/2010	658			<1.0	<1.0	3.0	<1.0	<1.1	<1.2	<1.1	0.012	0.002	0.006	<0.002	1.00	<0.1	2.8	17.7	3.5	108	8.7	6.48	0.00	0.00	1.00	0.00	0.00
BDC-05-04	11/9/2010	742			<1.0	<1.0	4.3	<1.0	<1.1	<1.2	<1.1	0.008	0.004	<0.002	<0.002	2.21	<0.1	2.2	21.3	3.0	101	7.2	6.84	0.00	0.00	1.00	0.00	0.00
BDC-05-04	2/15/2011	840			<1.0	<1.0	2.9	<1.0	<1.1	<1.2	<1.1	0.007	0.004	<0.002	<0.002	2.50	<0.1	2.4	19.4	4.5	93	6.9	6.85	0.00	0.00	1.00	0.00	0.00
BDC-05-04	5/2/2011	916	-108		0.4	0.5	3.1	<0.2	<1.1	<1.2	<1.1	0.008	0.004	<0.002	<0.002	1.69	<0.1	2.2	18.0	1.8	49	6.8	6.76	0.06	0.10	0.84	0.00	0.00
BDC-05-04	11/2/2011	1100	76		<1.0	<1.0	4.2	<1.0				0.007	0.006	<0.002	<0.002	1.52	<1.0	1.2	<1.0		-3	6.6	7.17	0.00	0.00	1.00	0.00	
BDC-05-04	5/7/2012	1287	263		0.4	0.6	3.6	<0.2				0.017	0.016	<0.002	<0.002	0.16		2.0	21.5		98	8.6	6.39	0.05	0.10	0.84	0.00	
BDC-05-04	11/13/2012	1477	453		<0.5	<0.5	3.3	<0.5				0.012	0.010	0.002	<0.002	0.02		1.2	14.3		27	6.5	6.65	0.00	0.00	1.00	0.00	
BDC-05-04	5/23/2013	1668	644		<0.2	<0.2	2.1	<0.2				0.026	0.027	<0.002	<0.002	0.49		1.5	13.7		-310	12.7	7.78	0.00	0.00	1.00	0.00	
BDC-05-04	11/13/2013	1842	818		<0.2	0.3	3.6	<0.2				0.016	0.015	0.002	<0.002	2.05		1.8	14.4		-262	8.1	6.48	0.00	0.06	0.94	0.00	
BDC-05-04	5/13/2014	2023	999		0.6	0.3	0.8	<0.2				0.002	0.002	0.005	0.002	3.86		0.6	14.1		-177	8.2	6.28	0.26	0.16	0.58	0.00	
BDC-05-04	11/11/2014	2205	1181		0.3	0.2	2.8	0.4				0.006	0.004	<0.002	<0.002	0.38		1.6	6.2		-58	4.8	6.25	0.05	0.04	0.75	0.17	
BDC-05-04	4/27/2015	2372	1348		1.0	0.4	1.0	<0.2				0.004	0.001	0.005	0.003	0.09		0.4	16.3		48	2.7	5.92	0.31	0.16	0.53	0.00	
BDC-05-04	10/28/2015	2556	1532		<0.2	<0.2	3.6	0.7				0.008	0.007	<0.002	<0.002	0.43		1.4	1.3		-26	6.1	6.44	0.00	0.00	0.77	0.23	
BDC-05-04	4/21/2016	2732	1708		1.0	0.3	0.4	<0.2				0.002	0.001	0.004	0.003	0.25		0.8	12.2		35	2.4	6.05	0.48	0.18	0.33	0.00	
BDC-05-04	11/2/2016	2927	1903		<0.2	<0.2	1.5	<0.2				0.008	0.008	<0.002	<0.002	0.39	<0.10	1.4	0.75		-140.5	7.4	6.51	0.00	0.00	1.00	0.00	
BDC-05-04	5/3/2017	3109	2085		1.2	0.4	0.3	<0.2				0.001	0.001	0.003	0.003	0.42	8.8	0.6	12.0		73.8	3.3	5.71	0.54	0.23	0.23	0.00	
BDC-05-04	11/6/2017	3296	2272	-4	0.3	0.3	1.1	<0.2	<1.0	<1.0	<1.0	0.012	0.010	<0.002	<0.002	0.93	<0.05	2.0	2.7	5.9	-28.3	9.2	6.71	0.12	0.15	0.73	0.00	0.00
BDC-05-04	5/2/2018	3473	2449	173	<2.0	<2.0	4.1	<2.0	<1.14	<1.23	<1.06	0.012	0.007	<0.010	<0.010	4.25		4.7	<1.0	14	-107	1246	5.68	0.00	0.00	1.00	0.00	0.00
BDC-05-04	11/7/2018	3662	2638	362	<0.2	<0.2	5.31	<0.2	<1.14	<1.23	<1.06	0.014	0.011	0.003	<0.001	0.97	<0.10	1.8	0.842	13.2	-24.8	119.3	6.21	0.00	0.00	1.00	0.00	0.00
BDC-05-04	5/3/2019	3839	2815	539	<0.2	0.21	2.02	<0.2	<1.14	<1.23	<1.06	0.015	0.012	0.006	<0.001	0.78	<0.10	3.3	8.21	13.3	-106.2	101.0	6.47	0.00	0.07	0.93	0.00	0.00
BDC-05-04	11/6/2019	4026	3002	726	<0.2	<0.2	2.08	0.48	<1.14	<1.23	<1.06	0.017	0.012	0.004	<0.001	0.02	<0.10	1.5	4.68	8.16	-85.5	48.80	6.23	0.00	0.00	0.74	0.26	0.00
BDC-05-04	5/6/2020	4208	3184	908	<0.2	<0.2	1.48	0.26	<1.14	<1.23	<1.06	0.021	0.017	0.008	<0.001	0.58	<0.10	0.0	0.197	5.15	1.7	108.4	6.24	0.00	0.00	0.79	0.21	0.00
BDC-05-04	11/6/2020	4392	3368	1092	<0.2	<0.2	1.61	0.46	<1.14	<1.23	<1.06	0.023	0.018	0.007	<0.001	3.18	<0.10	1.5	0.844	5.8	-76.2	48.9	6.11	0.00	0.00	0.69	0.31	0.00
BDC-05-04	5/5/2021	4572	3548	1272	<0.20	<0.20	0.88	0.41	<1.14	<1.23	<1.06	0.032	0.021	0.043	0.002	0.43	<0.500	2.5	5.24	7.5	-112.6	141.7	6.35	0.00	0.00	0.58	0.42	0.00
BDC-05-04	11/3/2021	4754	3730	1454	<0.20	<0.20	0.98	0.34	<1.14	<1.23	<1.06	0.039	0.021	0.036	0.001	0.64	<0.100	5.0	1.06	6.63	-86.3	39.4	6.20	0.00	0.00	0.65	0.35	0.00
BDC-05-04	5/10/2022	4942	3918	1642	<0.20	<0.20	0.91	0.47	<1.14	<1.23	<1.06	0.016	0.016	0.010	0.0004	6.64	<0.100	1.5	1.82	4.3	-84.9	32.2	6.34	0.00	0.00	0.56	0.44	0.00
BDC-05-04	11/9/2022	5125	4101	1825	<0.20	<0.20	0.64	0.84	<1.14	<1.23	<1.06	0.024	0.018	0.024	<0.001	0.55	<0.100	3.5	6.72	3.92	29.5	16.7	6.77	0.00	0.00	0.33	0.67	0.00
BDC-05-05	5/21/2007	-526			<1.0	<1.0	<1.0	<1.0				0.002	<0.001	0.003	<0.002									0.00	0.00	0.00	0.00	
(MW UG)	11/26/2007	-337			<1.0	<1.0	<1.0	<1.0				<0.001	<0.001	<0.002	<0.002									0.00	0.00	0.00	0.00	
	5/22/2008	-159			0.3	0.8	<0.2	<0.2				0.002	<0.001	0.003	<0.002									0.23	0.77	0.00	0.00	
BDC-05-05	10/23/2008	-5																						0.00	0.00	0.00	0.00	
BDC-05-05	11/20/2008	23			0.3	0.7	<0.2	<0.2				0.005	0.001	0.005	0.003	4.61					52		6.25	0.25	0.75	0.00	0.00	
BDC-05-05	12/16/2008	49																						0.00	0.00	0.00	0.00	
BDC-05-05	1/16/2009	80																						0.00	0.00	0.00	0.00	
BDC-05-05	2/11/2009	106																						0.00	0.00	0.00	0.00	
BDC-05-05	3/9/2009	132																						0.00	0.00	0.00	0.00	
BDC-05-05	4/16/2009	170																						0.00	0.00	0.00	0.00	
BDC-05-05	5/13/2009	197			<1.0	<1.0	<1.0	<1.0				0.003	<0.001	0.006	0.002	3.24					68		6.72	0.00	0.00	0.00	0.00	
BDC-05-05	8/16/2009	292																						0.00	0.00	0.00	0.00	
BDC-05-05	11/13/2009	381			<1.0	<1.0	<1.0	<1.0				0.001	<0.001	<0.002	<0.002	2.85	1.2	0.0	8.7		166		5.84	0.00	0.00	0.00	0.00	
BDC-05-05	2/16/2010	476																						0.00	0.00	0.00	0.00	
BDC-05-05	5/18/2010	567			<1.0	<1.0	<1.0	<1.0				0.002	0.0004	0.002	<0.002	3.47		0.0			494		6.74	0.00	0.00	0.00	0.00	
BDC-05-05	8/17/2010	658																						0.00	0.00	0.00	0.00	
BDC-05-05	11/9/2010	742			<1.0	1.1	<1.0	<1.0				0.001	0.0004	0.003	<0.002	3.20					135		6.90	0.00	1.00	0.00	0.00	
BDC-05-05	2/15/2011	840																						0.00	0.00	0.00	0.00	
BDC-05-05	5/2/2011	916	-108		0.3	0.8	<0.2	<0.2				0.001	0.0003	0.003	<0.002	3.40					158		6.98	0.23	0.77	0.00	0.00	
BDC-05-05	11/2/2011	1100	76		<1.0	1.2	<1.0	<1.0				0.001	0.0003	0.002	0.003	2.84	<0.1	0.0	7.5		85	1.7	7.66	0.00	1.00	0.00	0.00	
BDC-05-05	5/6/2012	1286	262		0.4	0.9	<0.2	<0.2				<0.001	<0.001	0.003	<0.002	3.23		0.0	22.1		219	1.1	6.42	0.26	0.74	0.00	0.00	
BDC-05-05	11/13/2012	1477	453		<0.5	1.1	<0.5	<0.5	<1.0	<1.0	<1.0	0.001	0.0005	0.003	<0.002	1.76		0.2	20.6	<0.003	27	<1.0	6.82	0.00	1.00	0.00	0.00	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-05	5/23/2013	1668	644		0.3	0.9	<0.2	<0.2				0.001	0.001	<0.002	<0.002	4.69		0.7	11.7		-165	1.5	7.35	0.21	0.79	0.00	0.00	
BDC-05-05	11/14/2013	1843	819		0.5	1.1	<0.2	<0.2				<0.001	<0.001	0.003	<0.002	1.95		0.0	21.8		-219	<1.0	6.70	0.26	0.74	0.00	0.00	
BDC-05-05	5/13/2014	2023	999		0.4	0.9	<0.2	<0.2				<0.001	<0.001	<0.002	<0.002	4.35		0.0	18.6		-108	3.6	6.60	0.26	0.74	0.00	0.00	
BDC-05-05	11/11/2014	2205	1181		0.3	0.8	<0.2	<0.2				0.001	0.001	<0.002	<0.002	2.50		0.0	12.5		92	<1.0	6.25	0.23	0.77	0.00	0.00	
BDC-05-05	4/27/2015	2372	1348		0.4	1.0	<0.2	<0.2				0.001	0.001	0.003	<0.002	3.14		0.0	16.1		31	<1.0	6.25	0.24	0.76	0.00	0.00	
BDC-05-05	10/28/2015	2556	1532		0.4	0.9	<0.2	<0.2				0.001	<0.0004	<0.002	<0.002	0.81		0.3	13.2		0	<1.0	6.39	0.26	0.74	0.00	0.00	
BDC-05-05	4/21/2016	2732	1708		0.3	0.6	<0.2	<0.2				0.001	<0.0004	<0.002	<0.002	4.00		0.0	13.4		14.5	<1.0	6.37	0.28	0.72	0.00	0.00	
BDC-05-05	11/2/2016	2927	1903		0.8	1.5	<0.2	<0.2				0.001	0.0004	0.003	0.003	0.29		0.2	35.7		6.6	3.2	6.54	0.30	0.70	0.00	0.00	
BDC-05-05	5/3/2017	3109	2085		0.4	0.7	<0.2	<0.2				0.001	<0.0004	0.003	<0.002	4.43		0.0	21.3		74.9	1.9	6.29	0.31	0.69	0.00	0.00	
BDC-05-05	11/6/2017	3296	2272	-4	0.5	1.0	<0.2	<0.2				0.001	<0.0004	0.004	0.002	0.87		0.0	39.0		-29.2	2.7	6.63	0.28	0.72	0.00	0.00	
BDC-05-05	5/2/2018	3473	2449	173	0.32	0.54	<0.2	<0.2				0.001	0.0003	0.002	0.002	4.03		0.0	24.6		191.6	1.9	6.25	0.32	0.68	0.00	0.00	
BDC-05-05	11/7/2018	3662	2638	362	0.69	1.17	<0.2	<0.2				0.001	0.0004	0.003	0.003	0.66		0.0	37.5		127.8	2.38	6.33	0.32	0.68	0.00	0.00	
BDC-05-05	5/3/2019	3839	2815	539	0.41	0.70	<0.2	<0.2				0.001	0.0003	0.003	0.002	4.89		0.4	36.3		6.1	1.85	6.57	0.32	0.68	0.00	0.00	
BDC-05-05	11/5/2019	4025	3001	725	0.66	1.04	<0.2	<0.2				0.001	0.0004	0.003	0.003	0.11		0.0	33.6		33.4	2.52	6.62	0.33	0.67	0.00	0.00	
BDC-05-05	5/5/2020	4207	3183	907	0.31	0.57	<0.2	<0.2				0.001	0.0003	0.003	0.002	4.64		0.0	39.9		80.0	2.13	6.58	0.30	0.70	0.00	0.00	
BDC-05-05	11/5/2020	4391	3367	1091	0.70	1.42	<0.2	<0.2				0.001	0.0005	0.003	0.003	0.21		1.5	27.0		18.9	2.27	6.62	0.28	0.72	0.00	0.00	
BDC-05-05	5/5/2021	4572	3548	1272	0.35	0.62	<0.20	<0.20				0.001	0.0003	0.003	0.002	2.28		0.5	22.6		48.2	1.87	6.43	0.31	0.69	0.00	0.00	
BDC-05-05	11/3/2021	4754	3730	1454	0.80	1.27	0.29	<0.20				0.001	0.0005	0.003	0.003	0.29		0.0	21.9		82.9	4.8	6.62	0.28	0.55	0.17	0.00	
BDC-05-05	5/11/2022	4943	3919	1643	0.34	0.51	<0.20	<0.20				0.001	0.0004	0.002	0.002	1.64		0.0	30.8		97.4	2.3	6.60	0.35	0.65	0.00	0.00	
BDC-05-05	11/9/2022	5125	4101	1825	0.72	0.96	<0.20	<0.20				0.001	0.0004	0.003	0.002	0.42		0.0	36.6		79.8	2.66	6.83	0.37	0.63	0.00	0.00	
BDC-05-07	5/21/2007	-526			30	22	10	<1.0				0.003	<0.001	0.014	0.009									0.40	0.37	0.23	0.00	
(IW 2011, 2017)	11/26/2007	-337			28	25	11	<1.0				<0.001	<0.001	0.011	0.002									0.36	0.40	0.24	0.00	
	5/22/2008	-159			33	32	9.2	<0.2				0.002	<0.001	0.012	0.006									0.37	0.45	0.18	0.00	
BDC-05-07	10/23/2008	-5			22	24	14	<0.2	<1.1	<1.2	<1.1	0.004	0.002	0.022	0.013	9.71	9.6	0.0	33.4	0.6	86.0	7.8	6.47	0.29	0.40	0.31	0.00	0.00
BDC-05-07	11/20/2008	23			17	17	4.9	<0.2	<1.1	<1.2	<1.1	0.003	<0.001	0.016	0.010	0.60	2.2	0.4	15.8	0.2	-27	4.6	6.46	0.36	0.46	0.18	0.00	0.00
BDC-05-07	12/16/2008	49			16	25	7.2	<1.0	<1.1	<1.2	<1.1	0.003	0.001	0.016	0.012	1.20	4.8	0.0	29.4	0.6	-107	6.1	6.49	0.27	0.53	0.21	0.00	0.00
BDC-05-07	1/16/2009	80			20	23	6.4	<1.0	<1.1	<1.2	<1.1	0.002	<0.001	0.013	0.008	0.00	8.4	0.0	32.6	0.03	-182	6.3	6.38	0.33	0.48	0.18	0.00	0.00
BDC-05-07	2/11/2009	106			23	28	9.9	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.017	0.012	2.05	11.2	0.0	37.5	1.5	-68	9.3	6.37	0.31	0.47	0.22	0.00	0.00
BDC-05-07	3/9/2009	132			20	21	8.4	<1.0	<1.1	<1.2	<1.1	<0.002	<0.001	0.013	0.009	0.00	8.8	0.3	35.3	5.5	-23	6.8	6.37	0.33	0.44	0.24	0.00	0.00
BDC-05-07	4/16/2009	170			20	21	11	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.015	0.008	0.27	8.2	0.0	31.2	5.1	35	8.1	6.43	0.31	0.41	0.29	0.00	0.00
BDC-05-07	5/13/2009	197			11	13	7.5	<1.0	<1.1	<1.2		0.002	0.001	0.016	0.008	0.29	6.8	0.4	27.2	7.9	34	7.3	6.47	0.27	0.41	0.32	0.00	0.00
BDC-05-07	8/16/2009	292			11	12	13	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.010	<0.002	0.74	2.3	2.0	23.2	6.8	67	8.2	6.73	0.23	0.31	0.46	0.00	0.00
BDC-05-07	11/13/2009	381			6.5	5.3	5.6	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.004	<0.002	0.50	<0.1	2.8	5.7	4.7	16	9.1	6.48	0.29	0.29	0.42	0.00	0.00
BDC-05-07	2/16/2010	476			6.4	6.9	28	<1.0	<1.1	<1.2	<1.1	0.004	0.003	0.017	0.006	1.04	<0.1	2.5	20.4	5.2	839	14.7	6.88	0.10	0.14	0.76	0.00	0.00
BDC-05-07	5/18/2010	567			5.8	9.2	41	1.2	<1.1	<1.2	<1.1	0.009	0.003	0.009	<0.002	1.06	<0.5	2.0	16.4	6.0	525	14.8	6.77	0.06	0.13	0.77	0.04	0.00
BDC-05-07	8/17/2010	658			2.8	7.8	19	<1.0	<1.1	<1.2	<1.1	0.006	0.003	0.008	<0.002	2.30	<0.1	2.5	8.6	7.1	-15	18.8	7.34	0.06	0.22	0.72	0.00	0.00
BDC-05-07	11/9/2010	742			<1.0	9.4	20	<1.0	<1.1	<1.2	<1.1	0.008	0.005	0.009	<0.002	2.42	<0.1	2.2	15.2	5.1	13	15.2	7.35	0.00	0.26	0.74	0.00	0.00
BDC-05-07	2/15/2011	840			<1.0	8.7	20	<1.0	<1.1	<1.2	<1.1	0.013	0.010	0.012	0.002	3.02	<0.1	2.8	11.8	5.1	21	14.0	7.16	0.00	0.24	0.76	0.00	0.00
BDC-05-07	5/2/2011	916	-108		5.2	11	17	<0.2	<1.1	<1.2	<1.1	0.017	0.004	0.014	0.003	2.14	0.1	2.6	15.6	3.2	33	16.8	6.90	0.11	0.29	0.60	0.00	0.00
BDC-05-07	11/2/2011	1100	76		11	6.9	39	<1.0	<1.1	<1.2	<1.1	0.042	0.035	0.010	0.006	2.06	<0.1	2.4	<1.0	16.1	-51	1780	6.31	0.13	0.10	0.77	0.00	0.00
BDC-05-07	5/7/2012	1287	263		0.8	<0.2	23	0.9	<1.0	<1.0	<1.0	0.026	0.024	0.003	<0.002	0.17		1.6	0.4	27.0	100	48.5	6.34	0.02	0.00	0.93	0.06	0.00
BDC-05-07	11/15/2012	1479	455		<0.2	0.4	24	0.8	<1.0	<1.0	<1.0	0.016	0.017	<0.002	<0.002	0.01		1.6	<0.3	23.0	3.0	26	6.60	0.00	0.01	0.94	0.05	0.00
BDC-05-07	5/22/2013	1667	643		<0.2	0.3	8.6	0.5	<1.0	<1.0	<1.0	0.006	0.007	<0.002	<0.002	0.17		1.4	0.45	11.0	-372	10.5	8.09	0.00	0.02	0.90	0.08	0.00
BDC-05-07	11/13/2013	1842	818		<0.2	<0.2	3.4	1.6	<1.0	1.3	<1.0	0.006	0.007	<0.002	<0.002	2.12		1.2	<0.30	8.5	-276	8.8	6.70	0.00	0.00	0.34	0.25	0.42
BDC-05-07	5/13/2014	2023	999		<0.2	0.2	2.5	1.4	<1.0	<1.0	<1.0	0.004	0.004	<0.002	<0.002	3.65		2.0	1.8	3.7	-368	9.1	6.55	0.00	0.03	0.52	0.45	0.00
BDC-05-07	11/11/2014	2205	1181		<0.2	<0.2	4.1	13	26	3.0	<1.0	0.006	0.005	<0.002	<0.002	0.21		2.6	0.72	14.0	-74	17.7	6.37	0.00	0.00	0.03	0.16	0.80
BDC-05-07	4/27/2015	2372	1348		<0.2	<0.2	0.6	5.3	1.6	<1.0	<1.0	0.004	0.005	<0.002	<0.002	0.06		2.0	<0.30	3.5	-50	5.5	6.27	0.00	0.00	0.04	0.57	0.39
BDC-05-07	10/28/2015	2556	1532		0.4	<0.2	1.0	1.9	1.8	1.2	<1.0	0.004	0.004	0.002	<0.002	0.17		1.0	0.41	3.7	-9.9	5.4	6.30	0.02	0.00	0.07	0.21	0.71
BDC-05-07	4/20/2016	2731	1707		0.5	<0.2	0.2	3.2	1.3	<1.0	<1.0	0.003	0.003	<0.002	<0.002	0.11		2.0	2.0	5.4	-23	3.8	6.35	0.03	0.00	0.02	0.50	0.45
BDC-05-07	11/2/2016	2927	1903		0.8	<0.2	0.2	0.3	<1.0	1.6	<1.0	0.002	0.002	<0.002	<0.002	0.14		0.6	<0.30	8.4	-103	5.5	6.44	0.07	0.00	0.03	0.07	0.82
BDC-05-07	5/4/2017	3110	2086		1.2	0.3	0.2	0.3	<1.0	<1.0	<1.0	0.001	<0.0004	<0.002	<0.002	0.37		1.0	3.3	3.1	31.4	3.6	6.25	0.44	0.14	0.13	0.29	0.00
BDC-05-07	11/6/2017	3296	2272	-4	0.7	<0.2	<0.2	0.2	<1.0	1.9	<1.0	0.006	0.005	<0.002	<0.002	1.30		1.8	1.5	6.9	-15.8	33.3	7.06	0.06	0.00	0.00	0.05	0.89
BDC-05-07	5/2/2018	3473	2449	173	<2.0	<2.0	3.3	<2.0	<1.14	<1.23	<1.06	0.007	0.006	0.022	<0.010	3.63		7.4	<0.5	16.1	-224.6	626.6	6.57	0.00	0.00	1.00	0.00	0.00
BDC-05-07	11/6/2018	3661	2637	361	<2.0	<2.0	2.01	<2.0	<1.14	<1.23	<1.06	0.004	0.003	0.022	0.003	1.83		2.8	0.335	16.3	-45.8	207.7	6.41	0.00	0.00	1.00	0.00	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-07	5/3/2019	3839	2815	539	<0.2	<0.2	1.90	0.93	<1.14	<1.23	<1.06	0.003	0.002	0.005	0.001	2.14		4.5	0.261	21.7	-76.2	158.6	6.40	0.00	0.00	0.57	0.43	0.00
BDC-05-07	11/6/2019	4026	3002	726	<0.2	<0.2	1.88	0.47	<1.14	<1.23	<1.06	0.002	0.002	0.007	<0.003	0.65		3.0	0.657	12.2	7.1	94.54	6.39	0.00	0.00	0.72	0.28	0.00
BDC-05-07	5/6/2020	4208	3184	908	<0.2	<0.2	0.34	0.32	<1.14	<1.23	<1.06	0.003	0.002	0.006	0.0004	1.05		2.2	0.979	7.6	-17.8	85.13	6.35	0.00	0.00	0.41	0.59	0.00
BDC-05-07	11/6/2020	4392	3368	1092	<0.2	<0.2	0.28	<0.2	<1.14	<1.23	<1.06	0.002	0.002	0.005	0.0006	1.72		2.0	0.179	5.8	-86.5	54.36	6.44	0.00	0.00	1.00	0.00	0.00
BDC-05-07	5/6/2021	4573	3549	1273	<0.20	<0.20	<0.20	0.24	<1.14	<1.23	<1.06	0.003	0.003	0.003	0.0003	0.58		3.5	1.44	4.9	-86.3	43.63	6.44	0.00	0.00	0.00	1.00	0.00
BDC-05-07	11/3/2021	4754	3730	1454	<0.20	<0.20	<0.20	<0.20	<1.14	<1.23	<1.06	0.003	0.002	0.005	<0.001	0.39		3.0	0.404	5.2	-108.1	32.2	6.42	NA	NA	NA	NA	NA
BDC-05-07	5/10/2022	4942	3918	1642	<0.20	0.21	0.42	0.83	<1.14	<1.23	<1.06	0.003	0.003	0.002	<0.001	6.58		2.5	5.17	3.8	-95.6	8.92	6.45	0.00	0.08	0.23	0.69	0.00
BDC-05-07	11/9/2022	5125	4101	1825	0.42	<0.20	0.24	0.68	<1.14	<1.23	<1.06	0.006	0.006	0.003	<0.001	0.27		4.0	7.01	2.55	6.9	14.43	6.78	0.16	0.00	0.16	0.68	0.00
BDC-05-08	10/23/2008	-5			1.1	3.7	3.5	<0.2	<1.1	<1.2	<1.1	0.007	<0.001	0.004	<0.002	1.90	0.3	0.0	8.9	4.7	-12.0	5.1	6.65	0.09	0.40	0.51	0.00	0.00
(MW 24 ft XG)	11/20/2008	23			1.1	3.4	4.2	<0.2	<1.1	<1.2	<1.1	0.035	0.004	0.036	<0.002	0.80	0.7	2.2	7.2	5.5	-43	5.9	6.63	0.09	0.34	0.57	0.00	0.00
	12/16/2008	49			1.2	4.3	4.3	<1.0	<1.1	<1.2	<1.1	0.008	0.001	0.006	<0.002	0.50	0.9	4.6	21.8	3.6	-99	5.4	6.61	0.09	0.39	0.53	0.00	0.00
BDC-05-08	1/16/2009	80			1.3	4.2	3.6	<1.0	<1.1	<1.2	<1.1	0.008	0.002	0.007	<0.002	0.25	1.7	3.0	7.0	6.9	-185	5.8	6.59	0.10	0.42	0.48	0.00	0.00
BDC-05-08	2/11/2009	106			<1.0	3.2	3.9	<1.0	<1.1	<1.2	<1.1	0.019	0.001	0.010	<0.002	2.38	0.3	4.4	4.7	4.4	-78	7.0	6.69	0.00	0.38	0.62	0.00	0.00
BDC-05-08	3/9/2009	132			<1.0	2.7	3.5	<1.0	<1.1	<1.2	<1.1	0.009	0.003	0.007	<0.002	0.07	<0.1	3.6	3.8	4.9	-4	6.7	6.65	0.00	0.36	0.64	0.00	0.00
BDC-05-08	4/16/2009	170			<1.0	2.3	4.4	<1.0	<1.1	<1.2	<1.1	0.007	0.003	0.006	<0.002	0.42	<0.1	2.0	1.7	6.7	-8	6.8	6.80	0.00	0.28	0.72	0.00	0.00
BDC-05-08	5/13/2009	197			<1.0	1.6	3.0	<1.0	<1.1	<1.2		0.009	0.003	0.007	0.002	1.77	<0.1	4.0	0.8	11.4	-13	6.0	6.87	0.00	0.28	0.72	0.00	0.00
BDC-05-08	8/16/2009	292			<1.0	2.1	3.5	<1.0	<1.1	<1.2	<1.1	0.012	0.008	<0.002	<0.002	0.87	<0.1	2.8	5.3	13.2	-20	6.1	7.15	0.00	0.31	0.69	0.00	0.00
BDC-05-08	11/13/2009	381			<1.0	1.2	3.1	<1.0	<1.1	<1.2	<1.1	0.011	0.008	0.007	<0.002	0.73	<0.1	2.8	3.3	17.4	0.8	8.4	6.44	0.00	0.22	0.78	0.00	0.00
BDC-05-08	2/16/2010	476			<1.0	<1.0	2.3	<1.0	<1.1	<1.2	<1.1	0.024	0.009	0.024	<0.002	0.63	<0.1	3.0	0.8	13.1	841	8.3	6.76	0.00	0.00	1.00	0.00	0.00
BDC-05-08	5/18/2010	567			<1.0	<1.0	2.4	<1.0	<1.1	<1.2	<1.1	0.031	0.011	0.027	<0.002	0.96	<0.1	3.0	0.8	14.9	451	7.3	6.92	0.00	0.00	1.00	0.00	0.00
BDC-05-08	8/17/2010	658			<1.0	<1.0	2.3	<1.0	<1.1	<1.2	<1.1	0.014	0.009	0.013	<0.002	2.57	<0.1	3.2	0.5	10.1	-30	7.2	7.30	0.00	0.00	1.00	0.00	0.00
BDC-05-08	11/9/2010	742			<1.0	<1.0	3.5	<1.0	<1.1	<1.2	<1.1	0.031	0.012	0.031	<0.002	2.74	<0.1	2.4	0.3	14.2	59	7.6	7.17	0.00	0.00	1.00	0.00	0.00
BDC-05-08	2/15/2011	840			<1.0	<1.0	2.1	<1.0	<1.1	<1.2	<1.1	0.021	0.010	0.016	<0.002	2.36	<0.1	5.0	0.3	14.1	66	8.7	7.08	0.00	0.00	1.00	0.00	0.00
BDC-05-08	5/2/2011	916	-108		<0.2	<0.2	2.2	<0.2	<1.1	<1.2	<1.1	0.029	0.010	0.024	<0.002	2.15	<0.1	2.4	0.7	7.8	-28	8.0	7.17	0.00	0.00	1.00	0.00	0.00
BDC-05-08	11/2/2011	1100	76		<1.0	<1.0	2.4	<1.0				0.014	0.010	0.012	0.003	1.15	<0.1	1.2	0.8		-53	7.3	6.88	0.00	0.00	1.00	0.00	
BDC-05-08	5/6/2012	1286	262		<0.2	<0.2	2.7	<0.2				0.021	0.020	0.007	0.002	0.01		2.5	0.4		42	12.4	6.77	0.00	0.00	1.00	0.00	
BDC-05-08	11/16/2012	1480	456		<0.5	<0.5	1.3	<0.5				0.014	0.010	0.005	<0.002	0.01		1.0	<0.3		5	8.1	6.91	0.00	0.00	1.00	0.00	
BDC-05-08	5/23/2013	1668	644		<0.2	<0.2	0.4	<0.2				0.008	0.007	0.002	<0.002	0.39		1.3	<0.3		-249	5.7	7.68	0.00	0.00	1.00	0.00	
BDC-05-08	11/13/2013	1842	818		<0.2	<0.2	4.3	0.8				0.012	0.010	0.003	<0.002	2.02		1.4	<0.30		-275	15.0	6.73	0.00	0.00	0.78	0.22	
BDC-05-08	5/13/2014	2023	999		<0.2	<0.2	2.9	1.8	<1.0	<1.0	<1.0	0.015	0.011	0.004	<0.002	2.02		1.4	0.31	7.7	-255	9.5	6.87	0.00	0.00	0.51	0.49	0.00
BDC-05-08	11/10/2014	2204	1180		<0.2	<0.2	3.8	16				0.017	0.015	0.003	<0.002	0.04		1.4	0.65		-104	21.6	6.26	0.00	0.00	0.13	0.87	
BDC-05-08	4/27/2015	2372	1348		<0.2	<0.2	0.8	2.3				0.019	0.011	0.004	<0.002	0.05		0.6	<0.30		-90	9.4	6.36	0.00	0.00	0.18	0.82	
BDC-05-08	10/28/2015	2556	1532		<0.2	<0.2	0.3	0.5				0.011	0.008	0.002	<0.002	0.06		1.0	<0.30		-31	8.6	6.47	0.00	0.00	0.28	0.72	
BDC-05-08	4/21/2016	2732	1708		<0.2	<0.2	0.2	1.2				0.014	0.012	0.007	<0.002	0.22			<0.30		-38	3.8	6.53	0.00	0.00	0.10	0.90	
BDC-05-08	11/3/2016	2928	1904		<0.2	<0.2	0.2	0.5								0.19		1.6	<0.30		-109.8	4.7	6.22	0.00	0.00	0.21	0.79	
BDC-05-08	5/4/2017	3110	2086		<0.2	<0.2	<0.2	0.5								0.62		1.6	0.41		-107.5	5.7	6.36	0.00	0.00	0.00	1.00	
BDC-05-08	11/6/2017	3296	2272	-4	<0.2	<0.2	<0.2	0.5				0.009	0.008	<0.002	0.004	0.50		2.2	0.90		-19.7	5.1	6.50	0.00	0.00	0.00	1.00	
BDC-05-08	5/2/2018	3473	2449	173	<0.2	<0.2	<0.2	<0.2				0.012	0.008	0.005	<0.001	1.44		3.4	0.137		-117.4	6.0	6.46	NA	NA	NA	NA	
BDC-05-08	11/6/2018	3661	2637	361	<0.2	<0.2	<0.2	<0.2				0.009	0.006	0.003	<0.001	0.55		3.6	<0.100		-57.6	8.35	6.39	NA	NA	NA	NA	
BDC-05-08	5/2/2019	3838	2814	538	<0.2	<0.2	<0.2	<0.2				0.018	0.008	0.010	<0.001	0.17		4.5	0.211		-54.6	5.29	6.31	NA	NA	NA	NA	
BDC-05-08	11/6/2019	4026	3002	726	<0.2	<0.2	<0.2	<0.2				0.016	0.006	0.011	0.001	0.08		3.0	0.495		37.0	9.31	6.55	NA	NA	NA	NA	
BDC-05-08	5/6/2020	4208	3184	908	<0.2	<0.2	<0.2	<0.2				0.008	0.005	0.003	<0.001	0.34		5.0	0.156		-22.5	8.35	6.42	NA	NA	NA	NA	
BDC-05-08	11/6/2020	4392	3368	1092	<0.2	<0.2	<0.2	<0.2				0.009	0.004	0.005	0.001	0.17		3.6	0.129		-9.9	6.81	6.44	NA	NA	NA	NA	
BDC-05-08	5/6/2021	4573	3549	1273	<0.20	<0.20	<0.20	<0.20				0.006	0.005	0.0005	<0.001	1.59		3.5	<0.500		-96.7	6.78	6.28	NA	NA	NA	NA	
BDC-05-08	11/5/2021	4756	3732	1456	<0.20	<0.20	<0.20	0.25				0.009	0.005	0.004	<0.001	0.50		4.0	<0.100		-79.9	7.8	6.59	0.00	0.00	0.00	1.00	
BDC-05-08	5/10/2022	4942	3918	1642	<0.20	<0.20	<0.20	0.22				0.008	0.007	0.001	<0.001	0.84		4.0	<0.100		68.5	6.71	6.57	0.00	0.00	0.00	1.00	
BDC-05-08	11/9/2022	5125	4101	1825	<0.20	<0.20	<0.20	<0.20				0.013	0.004	0.008	<0.001	0.28		4.0	<0.100		27.1	7.34	6.75	NA	NA	NA	NA	
BDC-05-09	7/31/2011		-18		30	20	22	<1.0	<1.1	<1.2	<1.1	0.007	0.007	<0.002	<0.002	1.37	<0.1	2.5	12.1	1.4	15	5.5	6.89	0.32	0.27	0.41	0.00	0.00
(IW 2011)	11/2/2011		76		37	56	44	1.3	<1.1	<1.2	<1.1	0.042	0.040	0.009	0.006	2.80	<0.1	3.0	7.6	4.3	80	4360	5.24	0.20	0.38	0.40	0.02	0.00
	5/7/2012		263		3.0	1.1	250	3.9	<1.0	<1.0	<1.0	0.059	0.052	0.011	<0.002	0.69		2.2	0.5	18.0	85	531	6.33	0.01	0.00	0.97	0.02	0.00
BDC-05-09	11/15/2012		455		<2.0	<2.0	24	20	69	<1.0	<1.0	0.074	0.070	0.006	<0.002	0.01		1.2	<0.3	27.0	-10	266	6.71	0.00	0.00	0.08	0.11	0.81
BDC-05-09	5/22/2013		643		<0.2	<0.2	1.0	3.7	23	3.4	<1.0	0.026	0.025	0.003	<0.002	0.18		1.5	<0.3	17.0	-300	40.6	7.83	0.00	0.00	0.01	0.06	0.93
BDC-05-09	11/13/2013		818		<0.2	<0.2	3.2	14	8.6	8.3	<1.0	0.022	0.022	<0.002	<0.002	2.80		1.4	0.9	11.0	-263	36.8	6.61	0.00	0.00	0.04	0.27	0.69

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-09	5/13/2014		999		<0.2	<0.2	0.7	1.0	1.6	8.5	<1.0	0.010	0.010	<0.002	<0.002	3.66		1.5	1.9	8.0	-356	13.1	6.53	0.00	0.00	0.02	0.04	0.94
BDC-05-09	11/11/2014		1181		<0.2	<0.2	1.1	3.5	1.2	6.4	<1.0	0.018	0.017	<0.002	<0.002	0.08		2.3	0.72	8.5	-47	6.9	6.19	0.00	0.00	0.04	0.17	0.79
BDC-05-09	4/27/2015		1348		<0.2	<0.2	0.4	8.3	5.0	4.3	<1.0	0.007	0.009	<0.002	<0.002	0.04		1.4	0.68	7.5	-53	4.0	6.27	0.00	0.00	0.01	0.29	0.70
BDC-05-09	10/28/2015		1532		<0.2	<0.2	0.3	2.1	<1.0	2.0	<1.0	0.008	0.008	<0.002	<0.002	0.15		1.0	<0.30	5.3	-5.3	2.5	6.36	0.00	0.00	0.03	0.33	0.64
BDC-05-09	4/20/2016		1707		<0.2	<0.2	<0.2	2.8	1.9	8.4	<1.0	0.007	0.009	<0.002	<0.002	0.08		3.0	<0.30	6.6	-30	2.8	6.36	0.00	0.00	0.00	0.11	0.89
BDC-05-09	11/2/2016		1903		<0.2	<0.2	<0.2	1.3	1.0	9.2	<1.0	0.009	0.009	<0.002	<0.002	0.41		1.6	2.8	7.6	-82.3	5.2	6.36	0.00	0.00	0.00	0.06	0.94
BDC-05-09	5/4/2017		2086		<0.2	<0.2	0.4	2.8	1.0	9.0	<1.0	0.006	0.006	<0.002	<0.002	0.26		2.0	4.3	5.3	-83.9	4.3	6.32	0.00	0.00	0.01	0.12	0.87
BDC-05-09	11/6/2017		2272	-4	<0.2	<0.2	<0.2	1.2	<1.0	8.7	<1.0	0.005	0.005	<0.002	<0.002	0.72		2.2	0.65	4.4	-17.5	3.6	6.51	0.00	0.00	0.00	0.06	0.94
BDC-05-09	5/2/2018		2449	173	<0.2	0.33	0.9	3.32	<1.14	<1.23	<1.06	0.008	0.007	<0.001	<0.001	0.46		2.0	0.195	15.3	-2.3	38.8	6.15	0.00	0.04	0.14	0.82	0.00
BDC-05-09	11/6/2018		2637	361	<0.2	<0.2	<0.2	0.98	<1.14	3.91	<1.06	0.009	0.009	<0.001	<0.001	1.30		3.6	<0.100	15.6	-24.3	39.0	6.23	0.00	0.00	0.00	0.11	0.89
BDC-05-09	5/2/2019		2814	538	<0.2	0.21	0.37	2.35	<1.14	4.35	<1.06	0.007	0.007	<0.001	<0.001	0.29		3.5	7.19	8.63	-32.6	26.23	6.18	0.00	0.01	0.02	0.20	0.77
BDC-05-09	11/6/2019		3002	726	<0.2	<0.2	0.21	1.62	<1.14	<1.23	<1.06	0.006	0.006	<0.001	<0.001	0.46		4.0	2.59	7.45	15.0	30.69	6.46	0.00	0.00	0.08	0.92	0.00
BDC-05-09	5/6/2020		3184	908	<0.2	0.32	0.25	1.57	<1.14	<1.23	<1.06	0.004	0.004	<0.001	<0.001	0.67		0.9	2.43	5.75	-7.2	29.08	6.52	0.00	0.08	0.09	0.83	0.00
BDC-05-09	11/6/2020		3368	1092	<0.2	<0.2	<0.2	0.87	<1.14	<1.23	<1.06	0.005	0.005	<0.001	<0.001	0.68		3.0	0.224	7.14	-91.9	43.99	6.54	0.00	0.00	0.00	1.00	0.00
BDC-05-09	5/6/2021		3549	1273	<0.20	0.26	<0.20	0.96	<1.14	4.38	<1.06	0.004	0.003	0.001	<0.001	1.28		3.5	1.47	4.79	-87.4	25.20	6.32	0.00	0.01	0.00	0.09	0.89
BDC-05-09	11/3/2021		3730	1454	<0.20	<0.20	<0.20	1.05	<1.14	2.63	<1.06	0.004	0.003	0.001	0.0002	0.21		7.0	0.413	5.74	48.2	14.5	6.56	0.00	0.00	0.00	0.16	0.84
BDC-05-09	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.90	<1.14	<1.23	<1.06	0.002	0.002	0.0002	<0.001	4.85		2.0	2.23	5.59	-100.1	6.61	6.51	0.00	0.00	0.00	1.00	0.00
BDC-05-09	11/9/2022		4101	1825	<0.20	<0.20	<0.20	1.02	<1.14	<1.23	<1.06	0.002	0.001	0.001	<0.001	0.49		0.5	1.37	2.7	14.9	7.18	6.62	0.00	0.00	0.00	1.00	0.00
BDC-05-10	7/31/2011		-18		39	26	12	<1.0	<1.1	<1.2	<1.1	0.002	0.002	<0.002	<0.002	1.41	<0.1	2.0	19.7	0.3	76	4.5	6.84	0.42	0.36	0.22	0.00	0.00
(IW 2011, 2017)	11/2/2011		76		22	27	1.0	<1.0	1.6	1.7	<1.1	0.038	0.037	0.008	0.004	2.43	<0.1	2.2	10.9	0.1	-38	2030	5.72	0.29	0.44	0.02	0.00	0.25
	5/6/2012		262		<1.0	<1.0	120	5.4	1.1	<1.0	<1.0	0.052	0.048	0.012	<0.002	0.02		1.7	0.4	19.0	58	270	6.48	0.00	0.00	0.91	0.06	0.03
BDC-05-10	11/15/2012		455		<1.0	<1.0	4.4	49	8.5	<1.0	<1.0	0.069	0.060	0.003	<0.002	0.02		1.0	<0.3	24.0	-11	122	6.63	0.00	0.00	0.04	0.69	0.27
BDC-05-10	5/22/2013		643		<0.2	<0.2	0.3	11	14	<3.0	<1.0	0.056	0.053	0.003	<0.002	0.25		1.2	0.49	20.0	-308	50.8	7.84	0.00	0.00	0.00	0.26	0.74
BDC-05-10	11/13/2013		818		<0.2	<0.2	0.6	15	17	<1.0	<1.0	0.058	0.052	<0.002	<0.002	3.33		1.8	<0.30	23.0	-263	54.1	6.55	0.00	0.00	0.01	0.28	0.71
BDC-05-10	5/13/2014		999		<0.2	<0.2	<0.2	5.1	29	<1.0	<1.0	0.037	0.034	<0.002	<0.002	3.87		1.6	<0.30	21.0	-196	27.6	6.53	0.00	0.00	0.00	0.07	0.93
BDC-05-10	11/10/2014		1180		<0.2	<0.2	0.2	3.9	3.4	<1.0	<1.0	0.040	0.038	<0.002	<0.002	0.03		1.0	<0.30	16.0	-86	19.3	6.25	0.00	0.00	0.01	0.34	0.65
BDC-05-10	4/27/2015		1348		<0.2	<0.2	<0.2	2.9	7.2	8.3	<1.0	0.026	0.024	0.003	<0.002	0.04		0.8	<0.30	14.0	-68	10.3	6.24	0.00	0.00	0.00	0.08	0.92
BDC-05-10	10/28/2015		1532		<0.2	<0.2	<0.2	0.7	<1.0	3.2	<1.0	0.021	0.019	<0.002	<0.002	0.17		1.0	<0.30	7.4	-14	7.8	6.42	0.00	0.00	0.00	0.10	0.90
BDC-05-10	4/20/2016		1707		<0.2	<0.2	<0.2	1.8	3.9	11	<1.0	0.015	0.016	<0.002	<0.002	0.22		1.1	0.65	5.8	-17	5.0	6.22	0.00	0.00	0.00	0.05	0.95
BDC-05-10	11/2/2016		1903		<0.2	<0.2	<0.2	0.8	<1.0	19	<1.0	0.022	0.021	<0.002	<0.002	0.15		0.6	<0.30	6.1	-109	7.5	6.34	0.00	0.00	0.00	0.02	0.98
BDC-05-10	5/4/2017		2086		<0.2	<0.2	0.3	1.8	1.0	15	<1.0	0.015	0.014	<0.002	<0.002	0.23		2.0	1.7	4.0	-89.7	6.0	6.38	0.00	0.00	0.01	0.05	0.94
BDC-05-10	11/6/2017		2272	-4	<0.2	<0.2	<0.2	0.6	<1.0	12	<1.0	0.014	0.011	<0.002	<0.002	0.32		2.0	1.3	6.2	8.90	5.3	6.37	0.00	0.00	0.00	0.02	0.98
BDC-05-10	5/2/2018		2449	173	<2.0	<2.0	7.43	<2.0	<1.14	<1.23	<1.06	0.036	0.022	0.063	<0.050	0.41		4.2	<1.0	13.8	-79.8	1453	6.44	0.00	0.00	1.00	0.00	0.00
BDC-05-10	11/6/2018		2637	361	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	<1.06	0.017	0.012	0.024	0.004	1.09		1.8	<0.100	18.4	-93.2	303.1	6.53	NA	NA	NA	NA	NA
BDC-05-10	5/2/2019		2814	538	<0.2	<0.2	1.16	2.01	<1.14	2.68	<1.06	0.013	0.009	0.048	0.001	0.34		3.0	1.85	19.3	-54.7	105.1	6.22	0.00	0.00	0.09	0.24	0.67
BDC-05-10	11/6/2019		3002	726	<0.2	<0.2	0.58	0.92	<1.14	<1.23	<1.06	0.010	0.009	0.022	<0.001	0.48		2.5	0.403	6.68	16.9	53.47	6.40	0.00	0.00	0.29	0.71	0.00
BDC-05-10	5/6/2020		3184	908	<0.2	<0.2	0.64	1.66	<1.14	<1.23	<1.06	0.009	0.007	0.010	0.001	0.66		1.8	1.16	11.0	-15.0	37.43	6.38	0.00	0.00	0.20	0.80	0.00
BDC-05-10	11/6/2020		3368	1092	<0.2	<0.2	0.24	0.34	<1.14	<1.23	<1.06	0.009	0.007	0.012	<0.001	1.22		2.5	0.182	8.68	-75.7	20.52	6.44	0.00	0.00	0.31	0.69	0.00
BDC-05-10	5/6/2021		3549	1273	<0.20	<0.20	0.40	1.18	<1.14	3.59	<1.06	0.006	0.005	0.005	0.0003	0.39		4.0	<0.500	6.90	-81.9	12.71	6.44	0.00	0.00	0.03	0.13	0.84
BDC-05-10	11/3/2021		3730	1454	<0.20	<0.20	0.24	0.43	<1.14	5.49	<1.06	0.010	0.008	0.010	0.0006	0.14		5.0	<0.100	6.62	63.1	14.6	6.43	0.00	0.00	0.01	0.04	0.95
BDC-05-10	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.55	<1.14	<1.23	<1.06	0.007	0.007	0.003	<0.001	6.13		1.5	<0.100	1.36	-89.9	7.58	6.41	0.00	0.00	0.00	1.00	0.00
BDC-05-10	11/9/2022		4101	1825	<0.20	<0.20	<0.20	0.42	<1.14	1.26	<1.06	0.006	0.006	0.003	<0.001	0.31		3.5	<0.100	5.14	18.3	7.63	6.66	0.00	0.00	0.00	0.14	0.86
BDC-05-11	7/31/2011		-18		16	19	5.8	<1.0	<1.1	<1.2	<1.1	0.005	0.005	<0.002	<0.002	1.41	<0.1	2.0	4.0	1.4	65	3.9	6.93	0.32	0.48	0.20	0.00	0.00
(IW 2011)	11/2/2011		76		9.6	20	12	<1.0	<1.1	<1.2	<1.1	0.039	0.037	0.013	0.004	2.16	<0.1	1.8	<1.0	1.0	-38	1330	5.72	0.17	0.46	0.37	0.00	0.00
	5/6/2012		262		0.2	0.5	44	7.2	1.6	<1.0	<1.0	0.038	0.034	0.009	0.002	0.01		1.4	0.5	18.0	70	284	6.42	0.00	0.01	0.72	0.18	0.09
BDC-05-11	11/15/2012		455		<1.0	<1.0	6.1	5.7	7.6	<1.0	<1.0	0.043	0.038	0.003	<0.002	0.02		1.3	<0.3	26.0	-15	73.8	6.76	0.00	0.00	0.15	0.21	0.64
BDC-05-11	5/22/2013		643		<0.2	<0.2	0.3	2.9	16	3.7	<1.0	0.035	0.032	<0.002	<0.002	0.25		1.6	0.43	23.0	-299	42.1	7.71	0.00	0.00	0.00	0.06	0.93
BDC-05-11	11/13/2013		818		<0.2	<0.2	0.2	3.9	17	4.6	<1.0	0.038	0.035	0.002	<0.002	3.81		2.0	0.36	24.0	-264	48.4	6.5	0.00	0.00	0.00	0.08	0.92
BDC-05-11	5/13/2014		999		<0.2	<0.2	<0.2	2.0	9.0	7.2	<1.0	0.038	0.036	<0.002	<0.002	4.13		1.8	<0.30	24.0	-185	38.1	6.49	0.00	0.00	0.00	0.05	0.95
BDC-05-11	11/10/2014		1180		<0.2	<0.2	<0.2	2.5	1.7	1.9	<1.0	0.030	0.030	<0.002	<0.002	0.01		1.8	<0.30	8.0	-88	11.1	6.30	0.00	0.00	0.00	0.24	0.76
BDC-05-11	4/27/2015		1348		<0.2	<0.2	<0.2	3.5	2.1	<1.0	<1.0	0.019	0.017	<0.002	<0.002	0.07		0.8	0.81	6.2	-77	7.6	6.22	0.00	0.00	0.00	0.43	0.57
BDC-05-11	10/28/2015		1532		<0.2	<0.2	<0.2	1.5	1.8	2.1	<1.0	0.018	0.017	<0.002	<0.002	0.11		0.6	<0.30	15.0	-16	7.4	6.52	0.00	0.00	0.00	0.15	0.85
BDC-05-11	4/20/2016		1707		<0.2	<0.2	<0.2	1.4	3.3	2.6	<1.0	0.020	0.020	<0.002	<0.002	0.08		0.8	<0.30	13.0	-15.4	6.5	6.33	0.00	0.00	0.00	0.10	0.90

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-11	11/2/2016		1903		<0.2	<0.2	<0.2	0.4	1.8	5.8	<1.0	0.017	0.015	<0.002	<0.002	0.11		2.8	<0.30	13.0	-118.1	9.0	6.27	0.00	0.00	0.00	0.02	0.98
BDC-05-11	5/4/2017		2086		<0.2	<0.2	<0.2	0.8	2.5	6.8	<1.0	0.018	0.018	<0.002	<0.002	0.24		2.0	<0.30	9.0	-101.7	9.2	6.37	0.00	0.00	0.00	0.04	0.96
BDC-05-11	11/6/2017		2272	-4	<0.2	<0.2	<0.2	0.3	<1.0	5.1	<1.0	0.012	0.011	<0.002	<0.002	0.54		3.8	<0.30	10.0	-15.5	7.4	6.37	0.00	0.00	0.00	0.03	0.97
BDC-05-11	5/2/2018		2449	173	<0.2	<0.2	<0.2	1.12	<1.14	<1.23	<1.06	0.014	0.013	0.001	<0.001	0.15		2.4	0.107	14.8	-5	40.8	6.27	0.00	0.00	0.00	1.00	0.00
BDC-05-11	11/7/2018		2638	362	<0.2	<0.2	<0.2	0.43	<1.14	1.35	<1.06	0.014	0.015	<0.001	<0.001	0.37		4.8	<0.100	20.7	-13.1	43.4	6.25	0.00	0.00	0.00	0.13	0.87
BDC-05-11	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.41	<1.14	2.02	<1.06	0.014	0.012	0.001	<0.001	0.29		2.5	0.652	18.9	-50.0	22.9	6.08	0.00	0.00	0.00	0.09	0.91
BDC-05-11	11/6/2019		3002	726	<0.2	<0.2	<0.2	0.29	<1.14	<1.23	<1.06	0.008	0.008	0.001	0.001	0.19			0.226	16.4	32.2	13.05	6.44	0.00	0.00	0.00	1.00	0.00
BDC-05-11	5/6/2020		3184	908	<0.2	<0.2	<0.2	0.70	<1.14	<1.23	<1.06	0.011	0.010	0.0004	<0.001	0.65		2.4	0.166	14.8	-9.7	16.68	6.39	0.00	0.00	0.00	1.00	0.00
BDC-05-11	11/6/2020		3368	1092	<0.2	<0.2	<0.2	0.29	<1.14	<1.23	<1.06	0.010	0.010	<0.001	<0.001	0.89		4.0	0.155	9.96	-81.2	11.58	6.46	0.00	0.00	0.00	1.00	0.00
BDC-05-11	5/6/2021		3549	1273	<0.20	<0.20	<0.20	0.80	<1.14	8.40	<1.06	0.012	0.013	0.0003	<0.001	0.38		5.0	<0.400	9.48	-86.0	11.19	6.44	0.00	0.00	0.00	0.04	0.96
BDC-05-11	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.39	<1.14	3.21	<1.06	0.009	0.009	0.0002	<0.001	0.82		4.8	<0.100	7.19	-78.7	7.1	6.32	0.00	0.00	0.00	0.06	0.94
BDC-05-11	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.64	<1.14	<1.23	<1.06	0.007	0.007	<0.001	<0.001	5.78		3.0	<0.100	4.79	-93.0	8.10	6.40	0.00	0.00	0.00	1.00	0.00
BDC-05-11	11/9/2022		4101	1825	<0.20	<0.20	<0.20	<0.20	<1.14	<1.23	<1.06	0.008	0.007	0.0004	<0.001	0.31		4.5	<0.100	6.75	35.3	9.27	6.61	NA	NA	NA	NA	NA
BDC-05-12	7/31/2011		-18		15	18	16	<1.0	<1.1	<1.2	<1.1	0.002	0.002	0.002	<0.002	1.60	0.1	2.4	8.4	4.0	26	7.0	7.02	0.23	0.35	0.42	0.00	0.00
(IW 2011)	11/2/2011		76		11	17	11	<1.0	<1.1	<1.2	<1.1	0.041	0.031	0.012	0.009	2.60	<0.1	3.5	5.6	1.0	-77	2960	5.83	0.21	0.42	0.37	0.00	0.00
	2/19/2012		185		<0.4	<0.4	53	1.8	<1.0	<1.0	<1.0					1.7	<0.5	2.0	<1.5	17.0	-2	279	6.59	0.00	0.00	0.95	0.05	0.00
BDC-05-12	5/6/2012		262		<0.2	<0.2	39	3.4	<1.0	<1.0	<1.0	0.082	0.071	0.005	<0.002	0.03		2.5	0.8	21.0	65	83.2	6.45	0.00	0.00	0.88	0.12	0.00
BDC-05-12	9/5/2012		384		<0.2	<0.2	6.5	3.3	1.0	<1.0	<1.0					0.13		1.8	<0.3	22.0	80	50.4	6.48	0.00	0.00	0.43	0.34	0.23
BDC-05-12	11/15/2012		455		<1.0	<1.0	7.9	5.4	1.1	<1.0	<1.0	0.037	0.036	0.002	<0.002	0.03		1.3	<0.3	27.0	7	52.9	6.56	0.00	0.00	0.39	0.42	0.19
BDC-05-12	2/25/2013		557		<1.0	<1.0	1.7	4.4	3.8	<1.0	<1.0					0.18		2.0	<0.3	26.0	54	27.5	6.68	0.00	0.00	0.08	0.32	0.61
BDC-05-12	5/22/2013		643		<0.2	<0.2	0.8	5.0	12	<3.0	<1.0	0.022	0.022	<0.002	<0.002	0.29		1.4	<0.3	24.0	-366	35.4	8.08	0.00	0.00	0.02	0.16	0.83
BDC-05-12	8/29/2013		742		<2.0	<2.0	<2.0	<2.0	5.5	2.8	<1.0					5.25		1.6	<0.30	22.0	-320	32.6	6.53	0.00	0.00	0.00	0.00	1.00
BDC-05-12	11/13/2013		818		<2.0	<2.0	<2.0	<2.0	2.2	3.4	<1.0	0.010	0.012	<0.002	<0.002	2.61		2.6	0.39	26.0	-268	26.9	6.66	0.00	0.00	0.00	0.00	1.00
BDC-05-12	2/11/2014		908		<1.0	<1.0	<1.0	<1.0	1.1	<6.0	<1.0					4.83		2.2	0.37	23.0	-239	19.7	6.57	0.00	0.00	0.00	0.00	1.00
BDC-05-12	5/13/2014		999		<1.0	<1.0	<1.0	<1.0	1.0	5.6	<1.0	0.007	0.006	<0.002	<0.002	3.01		2.0	0.49	25.0	-299	21.5	6.60	0.00	0.00	0.00	0.00	1.00
BDC-05-12	8/6/2014		1084		<1.0	<1.0	<1.0	1.1	1.8	4.5	<1.0					7.00		1.5	<0.30	21.0	-146	43.1	7.05	0.00	0.00	0.00	0.08	0.92
BDC-05-12	11/10/2014		1180		<1.0	<1.0	<1.0	1.7	2.5	8.9	<1.0	0.017	0.018	<0.002	<0.002	0.03		0.8	<0.30	25.0	-83	30.3	6.23	0.00	0.00	0.00	0.07	0.93
BDC-05-12	1/21/2015		1252		<0.2	<0.2	<0.2	2.8	1.5	5.0	<1.0					0.12		2.2	0.45	17.0	-115	22.6	6.25	0.00	0.00	0.00	0.17	0.83
BDC-05-12	4/27/2015		1348		<0.2	<0.2	<0.2	1.4	1.2	2.2	<1.0	0.017	0.017	<0.002	<0.002	0.07		1.1	<0.30	21.0	-84	13.2	6.29	0.00	0.00	0.00	0.16	0.84
BDC-05-12	7/21/2015		1433		<0.2	<0.2	<0.2	0.7	<1.0	3.1	<1.0					0.12		1.4	<0.30	18.0	-41	15.2	6.25	0.00	0.00	0.00	0.10	0.90
BDC-05-12	10/28/2015		1532		<0.2	<0.2	<0.2	0.9	<1.0	2.6	<1.0	0.034	0.033	0.003	<0.002	0.08		1.4	<0.30	14.0	-28	29.0	6.40	0.00	0.00	0.00	0.14	0.86
BDC-05-12	1/26/2016		1622		<0.2	<0.2	<0.2	0.8	1.3	4.3	<1.0					0.11		1.1	<0.30	19.0	-129	32.7	6.52	0.00	0.00	0.00	0.06	0.94
BDC-05-12	4/20/2016		1707		<0.2	<0.2	<0.2	0.4	<1.0	4.3	<1.0	0.016	0.017	<0.002	<0.002	0.10		1.1	<0.30	16.0	-44	14.3	6.45	0.00	0.00	0.00	0.04	0.96
BDC-05-12	8/9/2016		1818		<0.2	<0.2	<0.2	0.4	<1.0	2.7	<1.0	0.004	0.008	<0.002	<0.002	0.35		2.5	<0.30	13.0	-106.8	9.4	6.11	0.00	0.00	0.00	0.07	0.93
BDC-05-12	11/3/2016		1904		<0.2	<0.2	<0.2	<0.2	<1.0	2.8	<1.0	0.016	0.014	<0.002	<0.002	0.13		3.0	<0.30	12.0	-129.0	10.6	6.44	0.00	0.00	0.00	0.00	1.00
BDC-05-12	2/8/2017		2001		<0.2	<0.2	<0.2	0.4	<1.0	1.9	<1.0	0.006	0.007	<0.002	<0.002	0.28		2.4	<0.30	12.0	-25.1	8.6	6.52	0.00	0.00	0.00	0.09	0.91
BDC-05-12	5/4/2017		2086		<0.2	<0.2	<0.2	0.3	<1.0	2.4	<1.0	0.010	0.009	<0.002	<0.002	0.22		2.2	<0.30	11.0	-94.4	8.1	6.33	0.00	0.00	0.00	0.06	0.94
BDC-05-12	8/1/2017		2175		<0.2	<0.2	<0.2	<0.2	<1.0	8.0	<1.0	0.011	0.009	<0.002	<0.002	0.08		2.3	<0.30	9.5	-85.0	7.6	6.08	0.00	0.00	0.00	0.00	1.00
BDC-05-12	11/6/2017		2272	-4	<0.2	<0.2	<0.2	0.2	<1.0	1.6	<1.0	0.005	0.005	<0.002	<0.002	0.66		3.0	<0.30	12.0	-18.5	7.0	6.41	0.00	0.00	0.00	0.06	0.94
BDC-05-12	5/2/2018		2449	173	<0.2	<0.2	<0.2	0.46	<1.14	<1.23	<1.06	0.006	0.008	<0.001	<0.001	0.20		4.6	0.104	14.2	-12.5	19.4	6.29	0.00	0.00	0.00	1.00	0.00
BDC-05-12	11/6/2018		2637	361	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.006	0.007	<0.001	<0.001	0.56		3.8	<0.100	24.5	-64.4	23.33	6.37	NA	NA	NA	NA	NA
BDC-05-12	5/2/2019		2814	538	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.009	0.009	<0.001	<0.001	0.29		4.5	0.107	20.7	-62.6	17.66	6.26	NA	NA	NA	NA	NA
BDC-05-12	11/6/2019		3002	726	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.005	0.005	0.001	0.0005	0.48		3.0	0.726	17.4	30.4	13.49	6.53	NA	NA	NA	NA	NA
BDC-05-12	5/6/2020		3184	908	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.005	0.005	<0.001	<0.001	0.37		4.5	0.149	12.5	-22.4	10.59	6.40	NA	NA	NA	NA	NA
BDC-05-12	11/6/2020		3368	1092	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.004	0.004	<0.001	<0.001	0.36		4.0	0.161	10.5	-73.1	10.64	6.52	NA	NA	NA	NA	NA
BDC-05-12	5/5/2021		3548	1272	<0.20	<0.20	<0.20	<0.20	<1.14	<1.23	<1.06	0.005	0.004	0.0004	<0.001	0.37		3.5	<0.600	8.6	-93.0	8.52	6.38	NA	NA	NA	NA	NA
BDC-05-12	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.21	<1.14	<1.23	<1.06	0.004	0.005	0.0006	<0.001	0.62		3.0	<0.100	7.5	-84.0	7.7	6.53	0.00	0.00	0.00	1.00	0.00
BDC-05-12	5/11/2022		3919	1643	<0.20	<0.20	<0.20	<0.20	<1.14	<1.23	<1.06	0.006	0.005	0.0003	<0.001	0.96		3.0	<0.100	7.5	80.9	7.13	6.54	NA	NA	NA	NA	NA
BDC-05-12	11/8/2022		4100	1824	<0.20	<0.20	<0.20	<0.20	<1.14	<1.23	<1.06	0.003	0.003	<0.001	<0.001	0.32		5.0	<0.100	7.33	28.1	7.61	6.44	NA	NA	NA	NA	NA
BDC-05-13	7/31/2011		-18		5.2	6.6	2.6	<1.0	<1.1	<1.2	<1.1	0.003	0.002	0.002	<0.002	1.73	<0.1	2.0	2.3	5.0	-1	6.0	7.06	0.29	0.46	0.25	0.00	0.00
(IW 2011)	11/1/2011		75		<1.0	1.2	39	<1.0	<1.1	<1.2	<1.1	0.068	0.064	0.017	0.003	1.82	<1.0	1.5	<1.0	2.2	-70	550	6.65	0.00	0.02	0.98	0.00	0.00
	5/6/2012		262		<0.2	<0.2	13	3.9	1.7	<1.0	<1.0	0.051	0.046	0.003	<0.002	0.03		3.0	0.4	19.0	78	34.2	6.40	0.00	0.00	0.52	0.24	0.24
BDC-05-13	11/15/2012		455		<1.0	<1.0	<1.0	2.3	3.7	<1.0	<1.0	0.060	0.055	<0.002	<0.002	0.04		2.2	<0.3	22.0	-9	30.2	6.75	0.00	0.00	0.00	0.22	0.78

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-13	5/22/2013		643		<0.2	<0.2	0.3	1.2	3.8	3.9	<1.0	0.019	0.019	<0.002	<0.002	0.29		1.8	0.43	23.0	-296	21.4	7.76	0.00	0.00	0.01	0.07	0.92
BDC-05-13	11/13/2013		818		<0.2	<0.2	0.3	2.1	3.6	6.4	<1.0	0.031	0.027	<0.002	<0.002	3.20		1.6	0.31	19.0	-241	24.7	6.59	0.00	0.00	0.01	0.09	0.90
BDC-05-13	5/12/2014		998		<0.2	<0.2	<0.2	2.6	4.3	6.8	<1.0	0.032	0.032	<0.002	<0.002	4.73		2.4	<0.30	19.0	-238	23.4	6.69	0.00	0.00	0.00	0.10	0.90
BDC-05-13	11/10/2014		1180		<0.2	<0.2	0.2	2.5	2.1	2.2	<1.0	0.020	0.019	<0.002	<0.002	0.02		1.0	0.33	7.1	-123	15.1	6.41	0.00	0.00	0.01	0.21	0.78
BDC-05-13	4/27/2015		1348		<0.2	<0.2	<0.2	1.9	2.5	1.6	<1.0	0.019	0.018	<0.002	<0.002	0.09		0.8	<0.30	12.0	-102	8.9	6.45	0.00	0.00	0.00	0.18	0.82
BDC-05-13	10/28/2015		1532		<0.2	<0.2	<0.2	1.1	<1.0	1.0	<1.0	0.020	0.019	<0.002	<0.002	0.20		1.2	<0.30	6.1	-32	10.8	6.54	0.00	0.00	0.00	0.35	0.65
BDC-05-13	4/20/2016		1707		<0.2	<0.2	<0.2	2.0	1.9	2.0	<1.0	0.026	0.024	<0.002	<0.002	0.10		1.0	<0.30	10.0	-36	7.6	6.60	0.00	0.00	0.00	0.19	0.81
BDC-05-13	11/3/2016		1904		<0.2	<0.2	<0.2	1.0	<1.0	2.3	<1.0	0.023	0.020	<0.002	<0.002	0.08		1.0	<0.30	15.0	-140.9	12.2	6.32	0.00	0.00	0.00	0.17	0.83
BDC-05-13	5/4/2017		2086		<0.2	<0.2	<0.2	1.1	1.4	12	<1.0	0.027	0.027	<0.002	<0.002	0.17		2.4	<0.30	14.0	-123.1	11.6	6.42	0.00	0.00	0.00	0.04	0.96
BDC-05-13	11/6/2017		2272	-4	<0.2	<0.2	<0.2	1.1	<1.0	7.0	<1.0	0.030	0.030	<0.002	<0.002	0.36		1.8	<0.30	14.0	-28.5	18.5	6.53	0.00	0.00	0.00	0.07	0.93
BDC-05-13	5/2/2018		2449	173	<0.2	<0.2	<0.2	0.6	<1.14	<1.23	<1.06	0.029	0.026	0.0005	<0.001	0.98		1.6	0.112	16.0	-80.4	21.5	6.43	0.00	0.00	0.00	1.00	0.00
BDC-05-13	11/6/2018		2637	361	<0.2	<0.2	<0.2	0.62	<1.14	3.82	<1.06	0.034	0.032	0.0005	<0.001	0.26		2.4	<0.100	14.7	-108.6	20.12	6.52	0.00	0.00	0.00	0.07	0.93
BDC-05-13	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.41	<1.14	<1.23	<1.06	0.023	0.023	0.0004	<0.001	0.45		3.5	0.254	19.6	-93.9	23.23	6.46	0.00	0.00	0.00	1.00	0.00
BDC-05-13	11/6/2019		3002	726	<0.2	<0.2	<0.2	0.41	<1.14	<1.23	<1.06	0.023	0.025	<0.001	0.002	0.35		3.5	0.122	9.98	24.8	19.70	6.54	0.00	0.00	0.00	1.00	0.00
BDC-05-13	5/6/2020		3184	908	<0.2	<0.2	<0.2	0.33	<1.14	<1.23	<1.06	0.010	0.011	<0.001	<0.001	0.75		3.0	0.137	13.2	-32.6	11.14	6.35	0.00	0.00	0.00	1.00	0.00
BDC-05-13	11/5/2020		3367	1091	<0.2	<0.2	<0.2	0.33	<1.14	3.7	<1.06	0.016	0.016	0.0004	<0.001	0.30		2.4	0.16	13.7	-44.0	17.85	6.41	0.00	0.00	0.00	0.04	0.96
BDC-05-13	5/5/2021		3548	1272	<0.20	<0.20	<0.20	0.52	<1.14	4.78	<1.06	0.016	0.015	0.0004	<0.001	0.35		3.5	<0.100	11.8	-94.9	11.23	6.35	0.00	0.00	0.00	0.05	0.95
BDC-05-13	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.51	<1.14	5.87	<1.06	0.017	0.012	0.0003	<0.001	0.37		4.8	<0.100	7.2	-74.0	15.9	6.34	0.00	0.00	0.00	0.04	0.96
BDC-05-13	5/11/2022		3919	1643	<0.20	<0.20	<0.20	0.31	<1.14	3.06	<1.06	0.010	0.010	0.002	<0.001	0.96		2.0	<0.100	6.9	74.7	8.81	6.53	0.00	0.00	0.00	0.05	0.95
BDC-05-13	11/9/2022		4101	1825	<0.20	<0.20	<0.20	0.29	<1.14	5.08	<1.06	0.016	0.010	0.001	<0.001	0.32		6.5	<0.100	7.39	27.6	14.44	6.51	0.00	0.00	0.00	0.03	0.97
BDC-05-14	7/31/2011		-18		2.8	6.8	2.8	<1.0	<1.1	<1.2	<1.1	0.004	0.004	0.004	<0.002	1.76	<0.1	2.0	10.1	6.5	-15	8.6	7.00	0.17	0.53	0.30	0.00	0.00
(IW 2011)	11/1/2011		75		2.5	6.7	13	<1.0	<1.1	<1.2	<1.1	0.083	0.074	0.022	0.002	1.87	<1.0	2.3	<1.0	4.0	-124	725	6.13	0.08	0.25	0.67	0.00	0.00
	5/6/2012		262		<0.2	0.4	3.0	1.1	<1.0	<1.0	<1.0	0.012	0.009	<0.002	<0.002	0.08		1.7	0.6	23.0	99	41.5	6.33	0.00	0.06	0.60	0.34	0.00
BDC-05-14	11/15/2012		455		<0.2	<0.2	1.1	2.0	1.4	<1.0	<1.0	0.022	0.019	<0.002	<0.002	0.11		2.2	<0.3	24.0	-1.4	39.9	6.66	0.00	0.00	0.12	0.34	0.54
BDC-05-14	5/22/2013		643		<0.2	<0.2	0.2	1.3	1.3	<3.0	<1.0	0.012	0.012	<0.002	<0.002	0.40		1.8	<0.3	26.0	-311	26.3	7.69	0.00	0.00	0.03	0.30	0.67
BDC-05-14	11/13/2013		818		<0.2	<0.2	0.2	1.2	1.3	2.5	<1.0	0.017	0.015	<0.002	<0.002	3.80		1.5	<0.30	24.0	-219	29.5	6.44	0.00	0.00	0.01	0.13	0.86
BDC-05-14	5/12/2014		998		<0.2	<0.2	0.2	1.5	2.2	5.0	<1.0	0.018	0.021	<0.002	<0.002	5.21		2.0	<0.30	22.0	-233	30.2	6.55	0.00	0.00	0.01	0.09	0.90
BDC-05-14	11/10/2014		1180		<0.2	<0.2	0.4	5.1	4.3	6.4	<1.0	0.017	0.017	<0.002	<0.002	0.15		1.2	2.3	19.0	-97	21.3	6.35	0.00	0.00	0.01	0.18	0.81
BDC-05-14	4/27/2015		1348		<0.2	<0.2	0.4	1.6	<1.0	1.1	<1.0	0.018	0.015	<0.002	<0.002	0.11		1.4	1.8	11.0	-88	18.9	6.25	0.00	0.00	0.06	0.39	0.55
BDC-05-14	10/28/2015		1532		<0.2	<0.2	0.3	1.4	1.1	2.4	<1.0	0.015	0.013	<0.002	<0.002	0.11		1.0	0.46	12.0	-28	21.0	6.47	0.00	0.00	0.02	0.15	0.82
BDC-05-14	4/20/2016		1707		<0.2	<0.2	0.3	0.9	<1.0	1.7	<1.0	0.016	0.016	<0.002	<0.002	0.11		2.0	3.1	11.0	-42	22.3	6.71	0.00	0.00	0.04	0.19	0.76
BDC-05-14	11/3/2016		1904		<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	0.007	0.007	<0.002	<0.002	0.32		2.6	<0.30	17.0	-111	16.0	6.45	0.00	0.00	0.00	0.00	0.00
BDC-05-14	5/4/2017		2086		<0.2	<0.2	0.3	1	<2.0	8.9	<1.0	0.023	0.021	<0.002	<0.002	0.17		2.2	3.8	12.0	-125.1	21.8	6.45	0.00	0.00	0.01	0.05	0.94
BDC-05-14	11/6/2017		2272	-4	<0.2	<0.2	<0.2	0.7	<1.0	3.6	<1.0	0.020	0.020	<0.002	<0.002	0.31		2.8	3.8	14.0	-27.6	19.2	6.48	0.00	0.00	0.00	0.09	0.91
BDC-05-14	5/2/2018		2449	173	<0.2	<0.2	<0.2	0.33	<1.14	<1.23	<1.06	0.025	0.025	<0.001	<0.001	0.92		2.8	10.4	10.1	-98.5	20.6	6.46	0.00	0.00	0.00	1.00	0.00
BDC-05-14	11/6/2018		2637	361	<0.2	<0.2	<0.2	0.42	<1.14	<1.23	<1.06	0.029	0.031	<0.001	<0.001	0.34		4.0	9.23	23.8	-94.3	22.28	6.48	0.00	0.00	0.00	1.00	0.00
BDC-05-14	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.30	<1.14	<1.23	<1.06	0.030	0.031	<0.001	<0.001	0.76		4.9	2.82	20.3	-97.7	18.43	6.31	0.00	0.00	0.00	1.00	0.00
BDC-05-14	11/5/2019		3001	725	<0.2	<0.2	<0.2	0.29	<1.14	<1.23	<1.06	0.029	0.029	<0.001	<0.001	0.02		3.2	3.30	14.6	-134.1	19.80	6.57	0.00	0.00	0.00	1.00	0.00
BDC-05-14	5/5/2020		3183	907	<0.2	<0.2	<0.2	0.32	<1.14	<1.23	<1.06	0.043	0.038	0.0005	<0.001	0.78		3.3	2.36	15.8	-60.7	26.67	6.52	0.00	0.00	0.00	1.00	0.00
BDC-05-14	11/5/2020		3367	1091	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.013	0.012	<0.001	<0.001	1.09		1.8	0.18	14.6	-98.2	13.90	6.58	NA	NA	NA	NA	NA
BDC-05-14	5/5/2021		3548	1272	<0.20	<0.20	<0.20	0.32	<1.14	<1.23	<1.06	0.050	0.050	0.0002	0.0002	0.54		3.0	1.19	8.4	-109.3	23.09	6.46	0.00	0.00	0.00	1.00	0.00
BDC-05-14	11/8/2021		3735	1459	<0.20	<0.20	<0.20	0.27	<1.14	3.7	<1.06	0.042	0.044	<0.001	<0.001	0.45		6.0	<0.100	9.2	78.1	25.2	6.53	0.00	0.00	0.00	0.03	0.97
BDC-05-14	5/11/2022		3919	1643	<0.20	<0.20	<0.20	0.29	<1.14	2.64	<1.06	0.038	0.037	0.0003	<0.001	1.82		4.0	1.30	6.6	57.1	18.63	6.62	0.00	0.00	0.00	0.05	0.95
BDC-05-14	11/10/2022		4102	1826	<0.20	<0.20	<0.20	0.23	<1.14	2.9	<1.06	0.054	0.056	0.0004	<0.003	0.70		6.8	0.588	6.48	35.2	34.21	6.61	0.00	0.00	0.00	0.04	0.96
BDC-05-15	7/31/2011		-18		9.6	28	58	<1.0	<1.1	<1.2	<1.1	0.019	0.019	<0.002	<0.002	1.91	<0.1	1.3	18.6	0.8	-0.9	10.3	7.00	0.07	0.25	0.69	0.00	0.00
(IW 2011)	11/1/2011		75		4.8	9.8	15	<1.0	<1.1	<1.2	<1.1	0.061	0.058	0.010	0.009	2.38	<0.1	3.0	11.3	3.5	-0.1	4420	5.67	0.11	0.29	0.60	0.00	0.00
	5/6/2012		262		<2.0	<2.0	49	6.3	<1.0	<1.0	<1.0	0.057	0.047	0.009	0.004	0.07		1.8	<0.3	21.0	93	423	6.36	0.00	0.00	0.83	0.17	0.00
BDC-05-15	11/15/2012		455		<1.0	<1.0	1.5	7.5	1.8	<1.0	<1.0	0.054	0.049	<0.002	<0.002	0.02		0.8	<0.3	27.0	8	71.2	6.61	0.00	0.00	0.08	0.60	0.32
BDC-05-15	5/22/2013		643		<0.2	<0.2	0.3	16	11	<3.0	<1.0	0.065	0.061	<0.002	<0.002	0.22		1.0	0.3	25.0	-317	42.9	7.82	0.00	0.00	0.00	0.39	0.60
BDC-05-15	11/13/2013		818		<0.2	<0.2	0.2	4.9	7.2	2.5	<1.0	0.066	0.059	<0.002	<0.002	2.11		2.6	<0.30	23.0	-265	45.5	6.60	0.00	0.00	0.00	0.19	0.81
BDC-05-15	5/13/2014		999		<0.2	<0.2	<0.2	8.6	9.4	<1.0	<1.0	0.065	0.061	<0.002	<0.002	2.92		1.7	<0.30	26.0	-230	37.5	6.69	0.00	0.00	0.00	0.29	0.71
BDC-05-15	11/10/2014		1180		<0.2	<0.2	<0.2	1.3	4.6	8.6	<1.0	0.072	0.066	<0.002	<0.002	0.33		1.4	<0.30	25.0	-126	37.5	6.37	0.00	0.00	0.00	0.04	0.96
BDC-05-15	4/27/2015		1348		<0.2	<0.2	<0.2	1.9	3.2	5.1	<1.0	0.056	0.052	<0.002	<0.002	0.06		0.8	<0.30	18.0	-115	25.6	6.37	0.00	0.00	0.00	0.10	0.90

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-15	10/28/2015		1532		<0.2	<0.2	<0.2	0.7	1.2	6.0	<1.0	0.053	0.041	<0.002	<0.002	0.16		1.2	<0.30	17.0	-41	22.2	6.64	0.00	0.00	0.00	0.04	0.96
BDC-05-15	4/20/2016		1707		<0.2	<0.2	<0.2	1.1	<1.0	12	<1.0	0.057	0.051	<0.002	<0.002	0.13		0.6	<0.30	18.0	-67	27.6	6.78	0.00	0.00	0.00	0.04	0.96
BDC-05-15	11/3/2016		1904		<0.2	<0.2	<0.2	<0.2	<1.0	9.4	<1.0	0.047	0.044	<0.002	0.002	0.31		1.0	<0.30	15.0	-135.7	22.5	6.44	0.00	0.00	0.00	0.00	1.00
BDC-05-15	5/4/2017		2086		<0.2	<0.2	<0.2	0.7	<1.0	17	<1.0	0.048	0.049	<0.002	0.002	0.19		1.8	0.41	10.0	-141.5	23.9	6.57	0.00	0.00	0.00	0.02	0.98
BDC-05-15	11/7/2017		2273	-3	<0.2	<0.2	<0.2	0.3	<1.0	11	<1.0	0.053	0.053	<0.002	<0.002	0.16		1.8	<0.30	8.7	-29.1	25.1	6.69	0.00	0.00	0.00	0.01	0.99
BDC-05-15	5/2/2018		2449	173	<0.2	<0.2	<0.2	0.2	<1.14	<1.23	<1.06	0.044	0.044	0.0004	<0.001	0.88		1.8	0.108	11.3	-131.3	19.6	6.62	0.00	0.00	0.00	1.00	0.00
BDC-05-15	11/7/2018		2638	362	<0.2	<0.2	<0.2	0.22	<1.14	<1.23	<1.06	0.042	0.043	<0.001	<0.001	0.31		2.0	<0.100	19.3	-51.8	15.31	6.54	0.00	0.00	0.00	1.00	0.00
BDC-05-15	5/3/2019		2815	539	<0.2	<0.2	<0.2	0.21	<1.14	<1.23	<1.06	0.046	0.045	0.001	<0.001	0.62		1.8	0.164	26.0	-82.6	23.15	6.52	0.00	0.00	0.00	1.00	0.00
BDC-05-15	11/6/2019		3002	726	<0.2	<0.2	<0.2	0.25	<1.14	<1.23	<1.06	0.049	0.050	0.0003	0.001	0.28		3.5	0.269	19.4	23.5	24.89	6.63	0.00	0.00	0.00	1.00	0.00
BDC-05-15	5/6/2020		3184	908	<0.2	<0.2	<0.2	0.25	<1.14	<1.23	<1.06	0.045	0.045	<0.001	0.001	0.47		2.5	0.143	15.0	-49.0	20.74	6.52	0.00	0.00	0.00	1.00	0.00
BDC-05-15	11/6/2020		3368	1092	<0.2	<0.2	<0.2	0.26	<1.14	<1.23	<1.06	0.053	0.053	<0.001	<0.001	0.34		2.8	0.166	15.1	-39.9	23.15	6.56	0.00	0.00	0.00	1.00	0.00
BDC-05-15	5/5/2021		3548	1272	<0.20	<0.20	<0.20	0.28	<1.14	<1.23	<1.06	0.054	0.049	0.0004	<0.001	0.52		4.5	<0.100	11.1	-115.6	21.69	6.60	0.00	0.00	0.00	1.00	0.00
BDC-05-15	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.26	<1.14	2.34	<1.06	0.064	0.056	0.001	<0.001	0.48		6.5	<0.100	7.2	68.4	25.9	6.66	0.00	0.00	0.00	0.05	0.95
BDC-05-15	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.23	<1.14	<1.23	<1.06	0.056	0.049	<0.003	<0.003	0.27		3.8	0.294	6.1	30.6	18.48	6.75	0.00	0.00	0.00	1.00	0.00
BDC-05-15	11/9/2022		4101	1825	<0.20	<0.20	<0.20	0.28	<1.14	1.35	<1.06	0.034	0.036	<0.001	<0.001	0.42		5.8	<0.100	5.18	21.4	18.22	6.61	0.00	0.00	0.00	0.09	0.91
BDC-05-16	7/31/2011		-18		9.5	17	20	<1.0	<1.1	<1.2	<1.1	0.006	0.006	0.002	<0.002	1.91	<0.1	1.5	8.9	3.1	-8	7.8	7.06	0.15	0.33	0.52	0.00	0.00
(IW 2011)	11/1/2011		75		2.6	2.8	37	<1.0	<1.1	<1.2	<1.1	0.079	0.074	0.005	0.002	2.30	<1.0	2.5	2.8	3.1	7	2250	5.51	0.04	0.05	0.91	0.00	0.00
	2/19/2012		185		<2.0	<2.0	46	7.4	<1.0	<1.0	<1.0					1.59	<0.5	2.2	<1.5	18.0	128	1270	5.12	0.00	0.00	0.80	0.20	0.00
BDC-05-16	5/6/2012		262		<0.2	0.3	6.7	24	2.5	<1.0	<1.0	0.042	0.039	0.003	<0.002	0.06		2.5	<0.3	25.0	121	207	6.28	0.00	0.00	0.13	0.71	0.16
BDC-05-16	9/5/2012		384		<0.4	<0.4	0.9	8.1	6.0	<1.0	<1.0					0.12		2.0	<0.3	22.0	64	40.6	6.67	0.00	0.00	0.03	0.37	0.61
BDC-05-16	11/15/2012		455		<1.0	<1.0	<1.0	4.9	4.0	<1.0	<1.0	0.041	0.037	<0.002	<0.002	0.02		1.0	<0.3	28.0	7	32.3	6.68	0.00	0.00	0.00	0.35	0.65
BDC-05-16	2/25/2013		557		<1.0	<1.0	<1.0	13	4.7	2.7	<1.0					0.41		2.0	<0.30	28.0	68	34.6	6.77	0.00	0.00	0.00	0.45	0.55
BDC-05-16	5/22/2013		643		<0.2	<0.2	0.2	7.7	3.9	<3.0	<1.0	0.043	0.048	<0.002	<0.002	0.19		1.0	0.38	26.0	-291	33.1	7.70	0.00	0.00	0.01	0.47	0.53
BDC-05-16	8/28/2013		741		<1.0	<1.0	<1.0	4.0	4.2	<3.0	<1.0					1.77		1.4	<0.30	26.0	-316	31.6	6.57	0.00	0.00	0.00	0.30	0.70
BDC-05-16	11/13/2013		818		<1.0	<1.0	<1.0	4.3	3.2	<1.0	<1.0	0.048	0.046	<0.002	<0.002	2.04		2.2	<0.30	24.0	-263	36.0	6.64	0.00	0.00	0.00	0.38	0.62
BDC-05-16	2/11/2014		908		<1.0	<1.0	<1.0	2.1	2.0	<7.0	<1.0					4.05		2.0	<0.30	25.0	-236	28.9	6.67	0.00	0.00	0.00	0.32	0.68
BDC-05-16	5/12/2014		998		<1.0	1.3	<1.0	4.9	4.9	<1.0	<1.0	0.044	0.041	<0.002	<0.002	3.67		1.3	<0.30	28.0	-229	28.7	6.67	0.00	0.04	0.00	0.30	0.66
BDC-05-16	8/6/2014		1084		<1.0	<1.0	<1.0	2.4	1.9	<1.0	<1.0					5.07		1.4	<0.30	23.0	-176	27.8	7.27	0.00	0.00	0.00	0.36	0.64
BDC-05-16	11/11/2014		1181		<1.0	<1.0	<1.0	4.6	3.9	5.4	<1.0	0.056	0.055	<0.002	<0.002	0.08		1.2	0.82	26.0	-104	38.7	6.24	0.00	0.00	0.00	0.19	0.81
BDC-05-16	1/21/2015		1252		<0.2	<0.2	<0.2	2.9	5.7	6.1	<1.0					0.18		1.3	0.70	21.0	-135	33.6	6.31	0.00	0.00	0.00	0.10	0.90
BDC-05-16	4/26/2015		1347		<0.2	<0.2	<0.2	2.3	2.4	5.7	<1.0	0.048	0.046	0.002	<0.002	0.11		1.4	<0.30	22.0	-118	23.8	6.40	0.00	0.00	0.00	0.12	0.88
BDC-05-16	7/21/2015		1433		<0.2	<0.2	<0.2	1.7	1.4	6.3	<1.0					0.26		2.0	<0.30	22.0	-67	28.9	6.30	0.00	0.00	0.00	0.09	0.91
BDC-05-16	10/27/2015		1531		<0.2	<0.2	<0.2	2.8	1.0	5.5	<1.0	0.047	0.044	<0.002	<0.002	0.06		1.2	<0.30	19.0	-45	28.9	6.41	0.00	0.00	0.00	0.17	0.83
BDC-05-16	1/26/2016		1622		<0.2	<0.2	<0.2	1.7	<1.0	8	<1.0					0.41			<0.30	21.0	-126	23.7	6.51	0.00	0.00	0.00	0.09	0.91
BDC-05-16	4/20/2016		1707		<0.2	<0.2	<0.2	1.3	1.4	9.0	<1.0	0.042	0.039	0.006	<0.002	0.51		1.0	<0.30	17.0	-33	17.7	6.78	0.00	0.00	0.00	0.06	0.94
BDC-05-16	8/9/2016		1818		<0.2	<0.2	<0.2	0.9	1.0	12	<1.0	0.033	0.033	<0.002	<0.002	-0.02		1.6	<0.30	15.0	-75.1	16.9	6.57	0.00	0.00	0.00	0.03	0.97
BDC-05-16	11/3/2016		1904		<0.2	<0.2	<0.2	0.6	<1.0	6.9	<1.0	0.022	0.021	<0.002	<0.002	0.32		1.6	<0.30	13.0	-90.8	13.0	6.13	0.00	0.00	0.00	0.04	0.96
BDC-05-16	2/8/2017		2001		<0.2	<0.2	<0.2	0.8	<1.0	6.7	<1.0	0.033	0.032	<0.002	<0.002	0.29		2.4	<0.30	10.0	-51.1	17.7	6.62	0.00	0.00	0.00	0.05	0.95
BDC-05-16	5/4/2017		2086		<0.2	<0.2	<0.2	1.3	1.6	12	<1.0	0.029	0.027	<0.002	<0.002	0.15		2.0	<0.30	9.1	-95.8	17.0	6.34	0.00	0.00	0.00	0.04	0.96
BDC-05-16	8/1/2017		2175		<0.2	<0.2	<0.2	0.5	<1.0	9.9	<1.0	0.031	0.029	0.003	<0.002	0.05		2.0	<0.30	7.4	-104	12.7	6.12	0.00	0.00	0.00	0.02	0.98
BDC-05-16	11/7/2017		2273	-3	<0.2	<0.2	<0.2	0.7	<1.0	4.0	<1.0	0.021	0.020	<0.002	<0.002	0.41		2.8	<0.30	9.5	-5.0	11.6	6.48	0.00	0.00	0.00	0.08	0.92
BDC-05-16	5/2/2018		2449	173	<0.2	<0.2	<0.2	0.44	<1.14	<1.23	<1.06	0.027	0.026	<0.001	0.001	0.10		3.2	<0.1	12.2	-4.4	13.1	6.45	0.00	0.00	0.00	1.00	0.00
BDC-05-16	11/6/2018		2637	361	<0.2	<0.2	<0.2	0.54	<1.14	<1.23	<1.06	0.022	0.022	<0.001	0.001	0.45		3.5	<0.100	16.7	-93.6	14.17	6.47	0.00	0.00	0.00	1.00	0.00
BDC-05-16	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.49	<1.14	<1.23	<1.06	0.027	0.026	0.0004	0.001	0.78		5.8	0.103	22.6	-96.6	16.15	6.49	0.00	0.00	0.00	1.00	0.00
BDC-05-16	11/6/2019		3002	726	<0.2	<0.2	<0.2	0.51	<1.14	<1.23	<1.06	0.027	0.027	0.001	0.001	1.58		1.5	0.285	19.9	-142.6	20.08	6.56	0.00	0.00	0.00	1.00	0.00
BDC-05-16	5/5/2020		3183	907	<0.2	<0.2	<0.2	0.41	<1.14	<1.23	<1.06	0.027	0.026	<0.001	0.0005	0.35	<0.10	5.0	<0.100	16.1	-38.2	17.57	6.48	0.00	0.00	0.00	1.00	0.00
BDC-05-16	11/6/2020		3368	1092	<0.2	<0.2	<0.2	0.51	<1.14	<1.23	<1.06	0.028	0.028	<0.001	<0.001	0.44		3.4	0.174	14.4	-29.6	17.73	6.45	0.00	0.00	0.00	1.00	0.00
BDC-05-16	5/5/2021		3548	1272	<0.20	<0.20	<0.20	0.52	<1.14	<1.23	<1.06	0.026	0.026	0.0002	0.0002	0.77		3.4	<0.100	13.4	-112.0	14.50	6.51	0.00	0.00	0.00	1.00	0.00
BDC-05-16	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.49	<1.14	<1.23	<1.06	0.025	0.023	0.0002	<0.001	0.28		3.5	<0.100	9.0	75.9	16.7	6.58	0.00	0.00	0.00	1.00	0.00
BDC-05-16	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.36	<1.14	<1.23	<1.06	0.027	0.026	<0.001	<0.001	0.93		5.0	<0.100	5.5	34.8	15.56	6.62	0.00	0.00	0.00	1.00	0.00
BDC-05-16	11/9/2022		4101	1825	<0.20	<0.20	<0.20	0.35	<1.14	1.83	<1.06	0.027	0.028	<0.001	<0.001	0.70		5.3	<0.100	4.47	22.0	20.70	6.50	0.00	0.00	0.00	0.08	0.92
BDC-05-17	7/31/2011		-18		11	22	34	<1.0	<1.1	<1.2	<1.1	0.004	0.004	0.003	0.002	2.03	0.6	1.5	16.0	0.30	59	10.2	6.95	0.11	0.29	0.60	0.00	0.00
(IW 2011)	11/1/2011		75		3.2	4.8	5.1	<1.0	<1.1	<1.2	<1.1	0.053	0.047	0.005	<0.002	2.61	<1.0	2.4	23.9	2.8	-50	3500	5.74	0.18	0.34	0.49	0.00	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
	5/6/2012		262		<2.0	<2.0	9.3	5.6	<1.0	<1.0	<1.0	0.058	0.026	0.003	<0.002	0.24		2.0	0.7	15.0	182	839	6.08	0.00	0.00	0.52	0.48	0.00
BDC-05-17	11/15/2012		455		<5.0	<5.0	<5.0	5.4	2.0	<1.0	<1.0	0.081	0.062	<0.002	<0.002	0.02		1.0	<0.3	23.0	13	73.5	6.62	0.00	0.00	0.00	0.55	0.45
BDC-05-17	5/23/2013		644		<0.2	<0.2	0.7	5.1	4.3	<3.0	<1.0	0.142	0.062	<0.002	<0.002	0.44		1.2	<0.3	26.0	-259	45.8	7.54	0.00	0.00	0.03	0.34	0.63
BDC-05-17	11/13/2013		818		<0.2	<0.2	0.5	4.0	3.0	2.2	<1.0	0.057	0.037	<0.002	<0.002	2.21		2.0	<0.30	26.0	-266	49.8	6.57	0.00	0.00	0.02	0.26	0.72
BDC-05-17	5/12/2014		998		<0.2	<0.2	0.4	3.2	2.5	6.0	<1.0	0.038	0.033	<0.002	<0.002	4.60		1.8	<0.30	25.0	-368	44.1	6.64	0.00	0.00	0.01	0.15	0.84
BDC-05-17	11/11/2014		1181		<0.2	<0.2	0.3	2.7	3.9	5.9	<1.0	0.038	0.036	<0.002	<0.002	0.06		2.0	0.74	26.0	-123	52.0	6.35	0.00	0.00	0.01	0.11	0.88
BDC-05-17	4/26/2015		1347		<0.2	<0.2	0.2	1.5	2.7	3.0	<1.0	0.039	0.032	0.004	<0.002	0.25		1.4	<0.30	21.0	-127	29.0	6.44	0.00	0.00	0.01	0.11	0.88
BDC-05-17	10/27/2015		1531		<0.2	<0.2	0.2	1.6	1.0	4.5	<1.0	0.037	0.036	<0.002	<0.002	0.12		1.5	<0.30	21.0	-47	32.0	6.38	0.00	0.00	0.01	0.12	0.87
BDC-05-17	4/20/2016		1707		<0.2	<0.2	<0.2	1	1.1	6.6	<1.0	0.042	0.036	0.003	<0.002	0.44		0.8	<0.30	19.0	-77	29.0	6.84	0.00	0.00	0.00	0.06	0.94
BDC-05-17	11/3/2016		1904		<0.2	<0.2	<0.2	0.9	<1.0	7.6	<1.0	0.041	0.035	<0.002	<0.002	0.45		1.0	<0.30	19.0	-118.8	19.9	6.23	0.00	0.00	0.00	0.05	0.95
BDC-05-17	5/4/2017		2086		<0.2	<0.2	<0.2	0.9	<2.0	13	<1.0	0.044	0.037	<0.002	<0.002	0.14		1.0	<0.30	11.0	-110.4	19.2	6.29	0.00	0.00	0.00	0.03	0.97
BDC-05-17	11/7/2017		2273	-3	<0.2	<0.2	<0.2	0.8	<1.0	7.6	<1.0	0.033	0.033	<0.002	<0.002	0.47		1.8	<0.30	11.0	-2.7	15.8	6.52	0.00	0.00	0.00	0.05	0.95
BDC-05-17	5/2/2018		2449	173	<0.2	<0.2	<0.2	0.59	<1.14	<1.23	<1.06	0.032	0.032	<0.001	<0.001	0.13		2.8	<0.1	10.0	4.7	14.9	6.48	0.00	0.00	0.00	1.00	0.00
BDC-05-17	11/6/2018		2637	361	<0.2	<0.2	<0.2	0.64	<1.14	2.09	<1.06	0.029	0.030	<0.001	<0.001	0.33		3.2	<0.100	13.6	-94.4	11.21	6.51	0.00	0.00	0.00	0.13	0.87
BDC-05-17	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.58	<1.14	1.26	<1.06	0.032	0.031	0.001	<0.001	0.30		5.4	0.986	16.7	-98.5	17.81	6.56	0.00	0.00	0.00	0.18	0.82
BDC-05-17	11/6/2019		3002	726	<0.2	<0.2	<0.2	0.54	<1.14	<1.23	<1.06	0.030	0.032	0.001	<0.001	0.09		2.4	0.213	16.2	-152.2	20.00	6.57	0.00	0.00	0.00	1.00	0.00
BDC-05-17	5/5/2020		3183	907	<0.2	<0.2	<0.2	0.53	<1.14	<1.23	<1.06	0.029	0.028	0.0005	0.0005	0.42	<0.10	4.5	<0.100	17.4	-53.6	17.34	6.50	0.00	0.00	0.00	1.00	0.00
BDC-05-17	11/5/2020		3367	1091	<0.2	<0.2	<0.2	0.38	<1.14	<1.23	<1.06	0.032	0.031	0.0004	<0.001	0.38		3.8	0.203	15.2	-47.6	20.19	6.48	0.00	0.00	0.00	1.00	0.00
BDC-05-17	5/5/2021		3548	1272	<0.20	<0.20	<0.20	0.47	<1.14	<1.23	<1.06	0.030	0.031	0.0004	<0.001	1.23		4.7	<0.100	14.0	-118.3	18.24	6.50	0.00	0.00	0.00	1.00	0.00
BDC-05-17	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.42	<1.14	<1.23	<1.06	0.034	0.033	0.0005	<0.001	0.14		4.5	<0.100	12.2	57.4	17.8	6.60	0.00	0.00	0.00	1.00	0.00
BDC-05-17	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.40	<1.14	<1.23	<1.06	0.032	0.033	<0.003	<0.003	1.06		4.0	<0.100	7.7	40.8	21.71	6.62	0.00	0.00	0.00	1.00	0.00
BDC-05-17	11/9/2022		4101	1825	<0.20	<0.20	<0.20	0.36	<1.14	1.52	<1.06	0.028	0.028	0.001	0.0004	0.41		4.0	0.190	7.59	23.8	21.71	6.40	0.00	0.00	0.00	0.10	0.90
BDC-05-18	7/31/2011		-18		3.6	5.0	6.6	<1.0	<1.1	<1.2	<1.1	0.019	0.020	<0.002	<0.002	1.57	<0.1	2.4	4.5	3.9	-19	3.2	7.13	0.17	0.30	0.53	0.00	0.00
(MW 12 ft XG)	11/1/2011		75		2.8	4.0	7.6	<1.0	<1.1	<1.2	<1.1	0.019	0.020	0.003	0.003	1.37	<0.1	1.2	1.2	4.3	-106	21.7	6.88	0.13	0.24	0.62	0.00	0.00
	2/19/2012		185		1.8	3.7	12	<0.2	<1.0	<1.0	<1.0					0.19	<0.5	2.2	<1.5	11.0	9	2.7	6.66	0.07	0.17	0.76	0.00	0.00
BDC-05-18	5/6/2012		262		2.0	4.0	9.6	<0.2	<1.0	<1.0	<1.0	0.013	0.013	<0.002	<0.002	0.21		2.5	2.1	7.5	132	2.5	6.39	0.09	0.22	0.70	0.00	0.00
BDC-05-18	9/5/2012		384		1.5	3.1	11	0.2	<1.0	<1.0	<1.0					0.13		1.5	2.0	7.9	58	1.8	6.91	0.06	0.16	0.76	0.02	0.00
BDC-05-18	11/15/2012		455		1.0	4.3	16	<0.5	<1.0	<1.0	<1.0	0.015	0.014	<0.002	<0.002	0.48		1.4	2.4	8.3	25	1.7	6.62	0.03	0.16	0.81	0.00	0.00
BDC-05-18	2/25/2013		557		2.0	4.6	5.7	<0.2	<1.0	<1.0	<1.0					0.25		2.0	9.2	1.3	72	2.0	6.53	0.11	0.33	0.56	0.00	0.00
BDC-05-18	5/23/2013		644		3.1	5.2	4.1	<0.2	<1.0	<1.0	<1.0	0.014	0.014	<0.002	<0.002	0.30		1.5	7.0	1.0	-262	1.3	7.24	0.19	0.39	0.42	0.00	0.00
BDC-05-18	8/28/2013		741		2.2	3.7	7.4	<0.2	<1.0	<1.0	<1.0					0.76		1.6	4.1	1.5	-309	2.2	6.25	0.11	0.24	0.65	0.00	0.00
BDC-05-18	11/14/2013		819		1.2	1.8	1.4	0.2	<1.0	<1.0	<1.0	0.006	0.002	<0.002	<0.002	2.53		1.0	4.7	0.68	-164	<1.0	7.03	0.19	0.36	0.37	0.08	0.00
BDC-05-18	2/11/2014		908		1.7	2.1	5.4	0.3	<1.0	<1.0	<1.0					2.53		1.2	3.2	3.70	-224	1.4	6.68	0.12	0.18	0.64	0.06	0.00
BDC-05-18	5/13/2014		999		2.0	2.4	4.4	0.3	<1.0	<1.0	<1.0	0.001	0.002	<0.002	<0.002	3.54		1.5	6.7	3.2	-208	2.6	6.44	0.15	0.23	0.56	0.06	0.00
BDC-05-18	8/6/2014		1084		0.7	0.9	0.5	<0.2	<1.0	<1.0	<1.0					4.21		0.4	2.9	0.012	-49	1.4	8.05	0.26	0.42	0.32	0.00	0.00
BDC-05-18	11/10/2014		1180		0.4	1.1	1.2	<0.2	<1.0	<1.0	<1.0	0.006	0.002	<0.002	<0.002	0.78		0.5	3.0	0.058	3.2	<1.0	6.56	0.10	0.36	0.53	0.00	0.00
BDC-05-18	1/21/2015		1252		0.9	1.1	1.5	<0.2	<1.0	<1.0	<1.0					0.21		1.0	2.0	1.8	11.6	1.2	6.32	0.19	0.29	0.53	0.00	0.00
BDC-05-18	4/26/2015		1347		0.8	2.0	1.0	0.3	<1.0	<1.0	<1.0	0.027	0.004	0.003	<0.002	0.28		1.0	3.6	0.95	33	4.1	6.11	0.14	0.43	0.29	0.14	0.00
BDC-05-18	7/20/2015		1432		0.4	1.0	1.4	<0.2	<1.0	<1.0	<1.0					0.45		0.6	2.8	0.29	26	<1.0	6.30	0.10	0.31	0.59	0.00	0.00
BDC-05-18	10/27/2015		1531		0.7	1.3	2.4	<0.2	<1.0	<1.0	<1.0	0.014	0.001	0.006	<0.002	0.73		0.2	3.1	1.7	22	<1.0	6.43	0.11	0.25	0.64	0.00	0.00
BDC-05-18	1/26/2016		1622		2.2	2.9	1.3	<0.2	<1.0	<1.0	<1.0					1.03			5.4	0.17	-127	1.8	6.30	0.27	0.45	0.28	0.00	0.00
BDC-05-18	4/20/2016		1707		2.3	3.0	1	<0.2	<1.0	<1.0	<1.0	0.003	0.001	<0.002	<0.002	0.26		0.8	8.5	0.32	10.1	<1.0	6.51	0.29	0.49	0.22	0.00	0.00
BDC-05-18	8/9/2016		1818		1.8	2.9	2.6	<0.2	<1.0	<1.0	<1.0	0.003	0.002	<0.002	<0.002	0.42		2.8	2.5	0.74	-5.7	<1.0	6.45	0.18	0.37	0.45	0.00	0.00
BDC-05-18	11/2/2016		1903		1.2	1.6	4.1	0.4	<1.0	<1.0	<1.0	0.005	0.004	<0.002	<0.002	0.34		1.0	2.6	3.3	-11.8	2.0	6.21	0.11	0.18	0.62	0.09	0.00
BDC-05-18	2/7/2017		2000		2.8	3.4	2.4	<0.2	<1.0	<1.0	<1.0	0.011	0.003	<0.002	<0.002	0.40		3.0	5.3	0.72	32.4	1.8	6.24	0.25	0.38	0.37	0.00	0.00
BDC-05-18	5/3/2017		2085		3.6	4.6	1.3	<0.2	<1.0	<1.0	<1.0	0.007	0.002	<0.002	<0.002	1.33		2.2	8.1	0.095	81.5	1.7	5.94	0.31	0.50	0.19	0.00	0.00
BDC-05-18	8/1/2017		2175		1.9	2.4	1.1	<0.2	<1.0	<1.0	<1.0	0.047	0.001	<0.002	<0.002	1.12		2.6	5.2	3.9	-1.2	18.3	6.16	0.28	0.44	0.28	0.00	0.00
BDC-05-18	11/7/2017		2273	-3	0.6	1.7	2.6	<0.2	<1.0	<1.0	<1.0	0.112	0.003	0.004	<0.002	0.57		1.8	1.3	7.2	32.4	3.9	6.27	0.08	0.30	0.62	0.00	0.00
BDC-05-18	5/2/2018		2449	173	<0.2	0.31	6.74	3.42	<1.14	<1.23	<1.06	0.005	0.005	0.002	<0.001	0.46		4.6	0.823	15.6	15.0	27.9	6.03	0.00	0.02	0.55	0.43	0.00
BDC-05-18	11/7/2018		2638	362	0.90	1.01	6.86	2.18	<1.14	<1.23	<1.06	0.003	0.001	0.0004	<0.001	0.30		1.4	3.22	14.6	50.7	2.67	5.95	0.05	0.06	0.60	0.29	0.00
BDC-05-18	5/2/2019		2814	538	2.81	1.47	2.10	0.60	<1.14	<1.23	<1.06	0.002	0.0005	0.001	0.0004	0.34		1.0	7.20	4.71	58.7	1.94	5.98	0.29	0.19	0.36	0.16	0.00
BDC-05-18	11/6/2019		3002	726	3.41	1.42	1.42	0.52	<1.14	<1.23	<1.06	0.006	0.0003	0.002	0.001	2.39		1.4	9.24	2.43	41.5	2.59	6.20	0.38	0.20	0.27	0.15	0.00
BDC-05-18	5/5/2020		3183	907	1.98	2.57	1.25	0.85	<1.14	<1.23	<1.06	0.003	0.001	0.0004	0.001	0.55	<0.10	2.5	11.9	2.82	-3.6	2.04	6.03	0.21	0.34	0.22	0.23	0.00
BDC-05-18	11/6/2020		3368	1092	1.44	1.12	0.91	1.05	<1.14	<1.23	<1.06	0.002	0.001	0.0007	0.0004	1.18		1.4	4.8	2.07	48.7	1.40	6.01	0.20	0.20	0.22	0.39	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-18	5/5/2021		3548	1272	3.16	1.80	0.89	<0.20	<1.14	<1.23	<1.06	0.001	0.0002	0.001	0.0017	0.42		2.0	19.1	0.30	44.8	1.68	5.98	0.45	0.33	0.22	0.00	0.00
BDC-05-18	11/5/2021		3732	1456	2.44	1.54	0.88	<0.20	<1.14	<1.23	<1.06	0.002	0.0003	0.001	0.0007	0.40		2.5	5.8	0.51	77.4	1.8	6.28	0.41	0.33	0.26	0.00	0.00
BDC-05-18	5/10/2022		3918	1642	2.01	1.70	0.79	0.42	<1.14	<1.23	<1.06	0.004	0.0011	0.001	0.0003	0.77		6.0	7.7	0.24	72.8	1.44	6.16	0.30	0.32	0.20	0.17	0.00
BDC-05-18	11/9/2022		4101	1825	2.86	1.53	0.96	0.25	<1.14	<1.23	<1.06	0.017	0.0002	0.002	0.0005	0.30		2.8	6.13	0.218	25.5	8.33	6.15	0.40	0.27	0.23	0.09	0.00
BDC-05-19	7/31/2011		-18		15	21	23	<1.0	<1.1	<1.2	<1.1	0.002	0.001	0.002	<0.002	1.81	0.2	2.6	5.2	4.7	34	7.3	6.97	0.19	0.33	0.49	0.00	0.00
(MW 10 ft DG)	11/1/2011		75		9.1	13	36	4.1	<1.1	<1.2	<1.1	0.020	0.020	0.007	<0.002	1.53	<1.0	1.8	2.5	4.5	-142	170	6.82	0.09	0.17	0.63	0.11	0.00
	2/19/2012		185		<1.0	1.7	68	14	1.4	<1.0	<1.0					0.85	<0.5	2.0	<1.5	22.0	36	296	6.40	0.00	0.01	0.71	0.23	0.05
BDC-05-19	5/6/2012		262		0.7	1.4	52	23	1.8	<1.0	<1.0	0.058	0.052	0.032	0.008	0.02		2.0	1.4	25.0	69	244	6.39	0.00	0.01	0.55	0.37	0.07
BDC-05-19	9/5/2012		384		<2.0	<2.0	13	15	3.9	<1.0	<1.0					0.19		1.8	1.4	19.0	73	68.0	6.43	0.00	0.00	0.26	0.47	0.27
BDC-05-19	11/15/2012		455		<1.0	1.1	9.9	15	5.5	<1.0	<1.0	0.088	0.074	0.006	<0.002	0.21		1.6	1.8	24.0	3	68.1	6.58	0.00	0.02	0.19	0.44	0.36
BDC-05-19	2/25/2013		557		<1.0	<1.0	6.9	20	6.5	<1.0	<1.0					0.25		2.0	0.31	23.0	71	53.0	6.64	0.00	0.00	0.11	0.51	0.37
BDC-05-19	5/22/2013		643		<0.2	<0.2	5.1	9.6	7.2	<3.0	<1.0	0.054	0.051	0.006	<0.002	0.28		1.6	0.85	22.0	-385	52.4	8.12	0.00	0.00	0.11	0.33	0.55
BDC-05-19	8/28/2013		741		<2.0	<2.0	6.9	7.3	7.3	2.5	<1.0					1.53		2.0	0.52	22.0	-318	60.6	6.54	0.00	0.00	0.13	0.22	0.65
BDC-05-19	11/13/2013		818		<2.0	<2.0	2.3	3.1	4.1	3.0	<1.0	0.046	0.040	0.003	<0.002	3.93		1.4	0.52	26.0	-270	57.7	6.54	0.00	0.00	0.07	0.16	0.77
BDC-05-19	2/11/2014		908		<1.0	<1.0	<1.0	2.0	2.5	5.7	<1.0					5.69		2.0	0.39	23.0	-239	64.8	6.51	0.00	0.00	0.00	0.10	0.90
BDC-05-19	5/13/2014		999		<1.0	<1.0	<1.0	1.8	2.0	5.9	<1.0	0.033	0.025	0.003	<0.002	2.51		2.2	0.37	26.0	-306	54.9	6.56	0.00	0.00	0.00	0.10	0.90
BDC-05-19	8/6/2014		1084		<1.0	<1.0	<1.0	2.6	5.4	4.6	<1.0					6.55		1.8	<0.30	21.0	-174	57.8	7.13	0.00	0.00	0.00	0.11	0.89
BDC-05-19	11/10/2014		1180		<1.0	<1.0	<1.0	1.6	2.5	7.0	<1.0	0.032	0.025	0.004	<0.002	0.03		1.8	0.31	25.0	-82	40.1	6.20	0.00	0.00	0.00	0.07	0.93
BDC-05-19	1/21/2015		1252		<0.2	<0.2	<0.2	3.8	1.3	4.0	<1.0					0.19		2.2	0.55	18.0	-102	31.4	6.19	0.00	0.00	0.00	0.25	0.75
BDC-05-19	4/27/2015		1348		<0.2	<0.2	<0.2	1.6	<1.0	3.5	<1.0	0.031	0.023	0.006	<0.002	0.06		1.4	<0.30	19.0	-74	20.1	6.15	0.00	0.00	0.00	0.18	0.82
BDC-05-19	7/21/2015		1433		<0.2	<0.2	<0.2	1.5	1.6	2.2	<1.0					0.10		1.2	<0.30	21.0	-41	20.3	6.26	0.00	0.00	0.00	0.16	0.84
BDC-05-19	10/28/2015		1532		<0.2	<0.2	<0.2	1.0	<1.0	3.3	<1.0	0.034	0.027	0.004	<0.002	0.07		0.6	<0.30	19.0	-19	28.8	6.35	0.00	0.00	0.00	0.13	0.87
BDC-05-19	1/26/2016		1622		<0.2	<0.2	<0.2	1.2	<1.0	3.4	<1.0					0.21		1.3	<0.30	18.0	-95	25.9	6.41	0.00	0.00	0.00	0.15	0.85
BDC-05-19	4/20/2016		1707		<0.2	<0.2	<0.2	0.6	<1.0	3.4	<1.0	0.025	0.021	0.003	<0.002	0.14		1.2	0.36	19.0	-43	21.3	6.45	0.00	0.00	0.00	0.08	0.92
BDC-05-19	8/9/2016		1818		<0.2	<0.2	<0.2	0.4	<1.0	3.9	<1.0	0.015	0.014	<0.002	<0.002	0.31		1.5	0.6	17.0	-109.1	12.2	6.07	0.00	0.00	0.00	0.05	0.95
BDC-05-19	11/3/2016		1904		<0.2	<0.2	<0.2	0.2	<1.0	<1.0	<1.0	0.012	0.010	<0.002	<0.002	0.08		2.6	0.30	18.0	-116.1	12.9	6.24	0.00	0.00	0.00	1.00	0.00
BDC-05-19	2/8/2017		2001		<0.2	<0.2	<0.2	0.3	<1.0	3.2	<1.0	0.023	0.011	0.003	<0.002	0.34		3.2	0.32	16.0	-33.3	12.1	6.54	0.00	0.00	0.00	0.04	0.96
BDC-05-19	5/4/2017		2086		<0.2	<0.2	<0.2	0.4	<1.0	2.3	<1.0	0.020	0.013	<0.002	<0.002	0.24		1.8	0.43	13.0	-96	11.6	6.26	0.00	0.00	0.00	0.08	0.92
BDC-05-19	8/1/2017		2175		<0.2	<0.2	<0.2	0.2	<1.0	9.3	<1.0	0.017	0.012	<0.002	<0.002	0.11		2.2	<0.30	15.0	-98.0	10.2	6.21	0.00	0.00	0.00	0.01	0.99
BDC-05-19	11/6/2017		2272	-4	<0.2	<0.2	<0.2	<0.2	<1.0	1.5	<1.0	0.006	0.004	<0.002	<0.002	0.55		3.0	0.45	15.0	-19.6	9.3	6.46	0.00	0.00	0.00	0.00	1.00
BDC-05-19	5/2/2018		2449	173	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.011	0.008	<0.001	<0.001	1.28		3.4	0.124	13.8	-105.6	22.62	6.41	NA	NA	NA	NA	NA
BDC-05-19	11/6/2018		2637	361	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.006	0.006	<0.001	<0.001	0.71		4.6	0.255	20.9	-72.6	15.89	6.42	NA	NA	NA	NA	NA
BDC-05-19	5/2/2019		2814	538	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.012	0.011	0.001	<0.001	0.32		6.0	0.232	19.7	-69.4	15.61	6.25	NA	NA	NA	NA	NA
BDC-05-19	11/5/2019		3001	725	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.006	0.005	0.0005	<0.001	0.15		2.0	0.496	14.8	11.8	16.51	6.52	NA	NA	NA	NA	NA
BDC-05-19	5/5/2020		3183	907	<0.2	<0.2	<0.2	0.29	<1.14	<1.23	<1.06	0.015	0.013	0.0005	<0.001	0.80		3.7	0.312	12.9	-55.6	21.00	6.45	0.00	0.00	0.00	1.00	0.00
BDC-05-19	11/6/2020		3368	1092	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.006	0.005	0.0004	<0.001	0.63		4.5	0.138	12.2	-79.1	13.78	6.55	NA	NA	NA	NA	NA
BDC-05-19	5/6/2021		3549	1273	<0.20	<0.20	<0.20	0.26	<1.14	5.56	<1.06	0.011	0.009	0.0003	<0.001	0.81		3.5	<0.500	13.0	-99.3	16.28	6.34	0.00	0.00	0.00	0.02	0.98
BDC-05-19	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.23	<1.14	2.31	<1.06	0.009	0.008	0.0004	0.0002	0.72		3.0	<0.100	7.7	89.6	14.2	6.51	0.00	0.00	0.00	0.05	0.95
BDC-05-19	5/11/2022		3919	1643	<0.20	<0.20	<0.20	0.21	<1.14	4.11	<1.06	0.012	0.010	0.0003	<0.001	0.45		3.3	<0.100	8.3	83.2	11.58	6.54	0.00	0.00	0.00	0.02	0.98
BDC-05-19	11/9/2022		4101	1825	<0.20	<0.20	<0.20	<0.20	<1.14	<1.23	<1.06	0.005	0.004	0.0003	<0.001	0.31		5.5	<0.100	7.19	31.9	9.77	6.47	NA	NA	NA	NA	NA
BDC-05-20	7/31/2011		-18		<1.0	7.0	45	<1.0	<1.1	<1.2	<1.1	0.011	0.011	<0.002	<0.002	2.33	<0.1	1.5	7.4	0.2	-42	10.8	7.12	0.00	0.10	0.90	0.00	0.00
(MW 31 ft DG)	11/3/2011		77		<1.0	5.7	25	1.0	<1.1	<1.2	<1.1	0.010	0.011	<0.002	<0.002	1.54	<0.1	1.0	6.0	4.6	11	8.3	7.14	0.00	0.14	0.81	0.05	0.00
	2/19/2012		185		<0.2	2.9	17	2.5	<1.0	<1.0	<1.0					0.35	<0.5	1.5	<1.5	16.0	31	8.2	6.69	0.00	0.09	0.74	0.17	0.00
BDC-05-20	5/7/2012		263		<0.2	1.8	14	2.2	<1.0	<1.0	<1.0	0.011	0.011	<0.002	<0.002	0.69		1.8	2.3	20.0	20	11.1	6.66	0.00	0.07	0.75	0.18	0.00
BDC-05-20	9/5/2012		384		<0.4	<0.4	12	2.0	<1.0	<1.0	<1.0					0.08		1.4	<0.3	14.0	67	12.1	6.75	0.00	0.00	0.79	0.21	0.00
BDC-05-20	11/16/2012		456		<0.5	0.6	17	3.5	<1.0	<1.0	<1.0	0.012	0.013	<0.002	<0.002	0.07		2.0	<0.3	18.0	0.9	13.1	6.88	0.00	0.02	0.74	0.24	0.00
BDC-05-20	2/26/2013		558		<0.2	0.5	9.8	6.1	<1.0	<1.0	<1.0					0.16		1.5	<0.3	22.0	16	16.3	6.86	0.00	0.02	0.50	0.48	0.00
BDC-05-20	5/23/2013		644		<0.2	0.4	10	8.1	1.5	<1.0	<1.0	0.016	0.017	<0.002	<0.002	0.25		1.2	<0.3	25.0	-233	16.9	7.55	0.00	0.01	0.36	0.45	0.18
BDC-05-20	8/28/2013		741		<0.2	0.2	6.5	10	2.1	<1.0	<1.0					2.38		2.6	<0.30	20.0	-317	15.4	6.70	0.00	0.01	0.22	0.53	0.25
BDC-05-20	11/14/2013		819		<0.2	0.3	8.1	8.8	2.2	<1.0	<1.0	0.021	0.021	<0.002	<0.002	2.26		1.4	<0.30	19.0	-287	17.9	6.77	0.00	0.01	0.27	0.46	0.26
BDC-05-20	2/12/2014		909		<0.2	0.2	3.9	7.8	3.0	<4.0	<1.0					2.82		1.8	<0.30	16.0	-205	16.3	6.78	0.00	0.01	0.15	0.46	0.39
BDC-05-20	5/13/2014		999		<0.2	<0.2	3.8	6.3	2.0	<1.0	<1.0	0.017	0.017	<0.002	<0.002	3.44		1.6	0.36	16.0	-213	18.7	6.79	0.00	0.00	0.19	0.48	0.34
BDC-05-20	8/6/2014		1084		<0.2	<0.2	1.3	7.5	2.1	2.0	<1.0					4.23		1.4	<0.30	12.0	-150	17.6	7.31	0.00	0.00	0.05	0.44	0.51

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-20	11/10/2014		1180		<0.2	<0.2	0.7	4.9	3.0	3.6	<1.0	0.021	0.021	<0.002	<0.002	0.08		0.8	0.97	15.0	-117	15.9	6.50	0.00	0.00	0.02	0.25	0.73
BDC-05-20	1/21/2015		1252		<0.2	<0.2	0.5	3.8	2.7	2.6	<1.0					0.27		1.0	0.59	13.0	-120	13.8	6.47	0.00	0.00	0.02	0.24	0.73
BDC-05-20	4/26/2015		1347		<0.2	<0.2	0.4	6.9	4.8	1.6	<1.0	0.028	0.023	<0.002	<0.002	0.06		0.8	<0.30	14.0	-99	11.4	6.43	0.00	0.00	0.01	0.33	0.66
BDC-05-20	7/21/2015		1433		<0.2	<0.2	0.2	2.7	4.5	3.0	<1.0					0.12		1.3	<0.30	17.0	-59	14.2	6.55	0.00	0.00	0.01	0.14	0.85
BDC-05-20	10/27/2015		1531		<0.2	<0.2	<0.2	2.0	1.5	1.1	<1.0	0.028	0.028	<0.002	<0.002	0.23		1.4	<0.30	11.0	-35	10.6	6.47	0.00	0.00	0.00	0.26	0.74
BDC-05-20	1/26/2016		1622		<0.2	<0.2	0.2	2.7	2.1	1.5	<1.0					0.26		1.3	<0.30	11.0	-109	9.9	6.63	0.00	0.00	0.01	0.25	0.73
BDC-05-20	4/21/2016		1708		<0.2	<0.2	0.3	6.8	6.1	2.5	<1.0	0.034	0.030	<0.002	<0.002	0.38		0.8	<0.30	8.8	-44	16.2	6.63	0.00	0.00	0.01	0.26	0.73
BDC-05-20	8/9/2016		1818		<0.2	<0.2	0.2	2.2	7.0	2.9	<1.0	0.030	0.028	<0.002	<0.002	-0.01		2.0	0.37	8.4	-82	12.9	6.62	0.00	0.00	0.01	0.09	0.90
BDC-05-20	11/3/2016		1904		<0.2	<0.2	<0.2	1.4	5.2	2.5	<1.0	0.027	0.028	<0.002	<0.002	0.40		1.0	<0.30	8.9	-121.9	14.1	6.60	0.00	0.00	0.00	0.08	0.92
BDC-05-20	2/8/2017		2001		<0.2	<0.2	<0.2	1.8	5.2	2.8	<1.0	0.029	0.030	<0.002	<0.002	0.39		2.8	<0.30	7.1	-44.2	13.0	6.61	0.00	0.00	0.00	0.09	0.91
BDC-05-20	5/4/2017		2086		<0.2	<0.2	<0.2	1.2	2.3	4.3	<1.0	0.027	0.026	<0.002	<0.002	0.30		1.6	1.2	4.3	-99.6	12.9	6.55	0.00	0.00	0.00	0.08	0.92
BDC-05-20	8/1/2017		2175		<0.2	<0.2	<0.2	0.9	1.4	4.6	<1.0	0.027	0.027	<0.002	<0.002	0.61		2.1	<0.30	6.4	-104.9	12.3	6.46	0.00	0.00	0.00	0.07	0.93
BDC-05-20	11/7/2017		2273	-3	<0.2	<0.2	<0.2	1.1	<1.0	1.3	<1.0	0.027	0.027	<0.002	<0.002	0.36		2.2	<0.30	8.7	6.8	7.9	6.56	0.00	0.00	0.00	0.29	0.71
BDC-05-20	5/2/2018		2449	173	<0.2	<0.2	<0.2	1.04	<1.14	<1.23	<1.06	0.028	0.028	<0.001	0.0004	0.89		2.3	<0.1	3.9	-96.4	12.2	6.55	0.00	0.00	0.00	1.00	0.00
BDC-05-20	11/7/2018		2638	362	<0.2	<0.2	<0.2	0.90	<1.14	<1.23	<1.06	0.030	0.028	<0.001	<0.001	0.19		2.8	<0.100	24.3	-45.2	9.14	6.54	0.00	0.00	0.00	1.00	0.00
BDC-05-20	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.86	<1.14	<1.23	<1.06	0.028	0.027	<0.001	<0.001	0.23		3.8	<0.10	22.9	-84.3	11.96	6.57	0.00	0.00	0.00	1.00	0.00
BDC-05-20	11/6/2019		3002	726	<0.2	<0.2	<0.2	0.78	<1.14	<1.23	<1.06	0.025	0.026	0.0005	<0.001	1.07		3.2	0.196	20.8	-130.5	12.30	6.56	0.00	0.00	0.00	1.00	0.00
BDC-05-20	5/5/2020		3183	907	<0.2	<0.2	<0.2	0.73	<1.14	<1.23	<1.06	0.024	0.024	<0.001	0.0006	0.38	<0.10	5.0	<0.100	19.8	-37.5	11.85	6.48	0.00	0.00	0.00	1.00	0.00
BDC-05-20	11/5/2020		3367	1091	<0.2	<0.2	<0.2	0.46	<1.14	<1.23	<1.06	0.017	0.017	0.0003	<0.001	0.37		3.0	0.159	13.7	-35.9	12.80	6.47	0.00	0.00	0.00	1.00	0.00
BDC-05-20	5/5/2021		3548	1272	<0.20	<0.20	<0.20	0.75	<1.14	<1.23	<1.06	0.021	0.022	0.0005	0.0005	0.30		5.0	<0.100	10.4	-119.2	12.13	6.44	0.00	0.00	0.00	1.00	0.00
BDC-05-20	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.59	<1.14	<1.23	<1.06	0.018	0.017	0.0005	<0.001	0.15		5.5	<0.100	13.9	53.2	10.8	6.59	0.00	0.00	0.00	1.00	0.00
BDC-05-20	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.53	<1.14	<1.23	<1.06	0.026	0.024	<0.001	<0.001	1.14		5.5	<0.100	5.1	34.5	16.35	6.55	0.00	0.00	0.00	1.00	0.00
BDC-05-20	11/9/2022		4101	1825	<0.20	<0.20	<0.20	0.42	<1.14	<1.23	<1.06	0.021	0.020	<0.001	<0.001	0.32		5.5	0.616	4.22	31.9	14.64	6.46	0.00	0.00	0.00	1.00	0.00
BDC-05-21	7/31/2011		-18		<1.0	<1.0	1.3	14	2.6	<1.2	<1.1	0.006	0.006	<0.002	<0.002	2.98	<0.1	3.2	0.2	5.6	-31	6.4	7.33	0.00	0.00	0.04	0.68	0.28
(MW 30 ft XG)	11/3/2011		77		<1.0	<1.0	1.0	4.7				0.005	0.005	<0.002	<0.002	1.95	<0.1	1.4	6.3		-12	5.2	7.29	0.00	0.00	0.12	0.88	
	2/19/2012		185		<0.2	0.3	0.7	5.9								0.40	<0.5	1.4	<1.5		47	7.2	6.65	0.00	0.02	0.07	0.91	
BDC-05-21	5/7/2012		263		<0.2	0.4	0.8	2.5				0.010	0.011	0.005	<0.002	0.86		1.5	1.9		-35	12.3	6.76	0.00	0.06	0.16	0.78	
BDC-05-21	9/5/2012		384		<0.2	0.3	0.6	2.9								0.08		2.5	1.4		62	9.5	6.78	0.00	0.04	0.11	0.85	
BDC-05-21	11/16/2012		456		<0.5	<0.5	0.6	2.9				0.020	0.020	<0.002	<0.002	0.02		1.5	0.6		-4	8.9	6.92	0.00	0.00	0.12	0.88	
BDC-05-21	2/26/2013		558		<0.2	0.3	0.8	3.3	<1.0	<1.0	<1.0					0.24		1.4	<0.3	18.0	-2.6	8.7	7.03	0.00	0.04	0.13	0.83	0.00
BDC-05-21	5/23/2013		644		<0.2	0.3	0.9	6.5				0.024	0.022	<0.002	<0.002	0.19		1.5	<0.3		-235	8.2	7.50	0.00	0.02	0.08	0.90	
BDC-05-21	8/28/2013		741		<0.2	0.2	0.8	7.7	6.2	1.8	<1.0					0.74		3.5	<0.30	14.0	-310	7.9	6.72	0.00	0.00	0.02	0.30	0.68
BDC-05-21	11/14/2013		819		<0.2	0.2	1.0	7.3	3.5	1.4	<1.0	0.019	0.017	<0.002	<0.002	2.84		2.0	<0.30	12.0	-239	7.7	6.78	0.00	0.01	0.03	0.39	0.57
BDC-05-21	2/12/2014		909		<0.2	0.2	3.0	3.4	1.9	2.9	<1.0					2.74		2.2	<0.30	12.0	-210	8.3	6.87	0.00	0.01	0.12	0.22	0.65
BDC-05-21	5/13/2014		999		<0.2	<0.2	1.9	2.2	2.8	2.9	<1.0	0.022	0.017	<0.002	<0.002	3.33		1.4	0.60	9.1	-259	8.6	6.82	0.00	0.00	0.08	0.14	0.78
BDC-05-21	8/6/2014		1084		<0.2	<0.2	2.3	5.6	3.8	1.8	<1.0					3.75		2.2	<0.30	6.5	-153	9.4	7.42	0.00	0.00	0.08	0.29	0.63
BDC-05-21	11/10/2014		1180		<0.2	<0.2	1.5	3.4	4.3	1.2	<1.0	0.017	0.014	<0.002	<0.002	0.24		1.4	0.99	5.8	-126	5.7	6.44	0.00	0.00	0.06	0.21	0.73
BDC-05-21	1/21/2015		1252		<0.2	<0.2	1.1	3.5	2.2	<1.0	<1.0					0.15		1.0	0.97	1.8	-124	6.3	6.43	0.00	0.00	0.08	0.38	0.54
BDC-05-21	4/27/2015		1348		<0.2	<0.2	1.5	4.4	2.7	<1.0	<1.0	0.013	0.011	<0.002	<0.002	0.28		0.8	1.9	4.8	-104	5.4	6.43	0.00	0.00	0.08	0.39	0.53
BDC-05-21	7/20/2015		1432		<0.2	<0.2	0.8	3.0	2.7	<1.0	<1.0					0.17		1.2	0.55	6.8	-84	4.5	6.41	0.00	0.00	0.05	0.31	0.63
BDC-05-21	10/27/2015		1531		<0.2	<0.2	0.5	4.1	2.1	<1.0	<1.0	0.009	0.011	<0.002	<0.002	0.08		2.0	0.49	3.0	-46	5.7	6.53	0.00	0.00	0.04	0.45	0.51
BDC-05-21	1/26/2016		1622		<0.2	<0.2	2.0	2.9	1.2	<1.0	<1.0					1.41			1.40	2.5	-119	13.8	6.50	0.00	0.00	0.19	0.42	0.39
BDC-05-21	4/21/2016		1708		<0.2	<0.2	1.7	2.4	1.6	<1.0	<1.0	0.016	0.016	<0.002	<0.002	0.18		1.0	1.1	4.6	-75	12.7	6.78	0.00	0.00	0.16	0.34	0.50
BDC-05-21	8/9/2016		1818		<0.2	<0.2	0.6	1.6	3	2.3	<1.0	0.008	0.008	<0.002	<0.002	0.05		4.0	<0.30	11.0	-99.6	6.7	6.52	0.00	0.00	0.03	0.12	0.85
BDC-05-21	11/2/2016		1903		<0.2	<0.2	0.4	1.3	1.2	1.8	<1.0	0.008	0.009	<0.002	<0.002	0.43		0.8	<0.30	8.8	-122.8	9.5	6.45	0.00	0.00	0.03	0.16	0.80
BDC-05-21	2/7/2017		2000		<0.2	<0.2	0.5	1.4	<1.0	1.6	<1.0	0.007	0.006	<0.002	<0.002	0.36		2.6	<0.30	9.1	-67.5	9.3	6.52	0.00	0.00	0.06	0.28	0.66
BDC-05-21	5/3/2017		2085		<0.2	<0.2	0.7	2.0	2.8	1.3	<1.0	0.009	0.009	<0.002	<0.002	0.46		2.0	0.64	3.4	-114.4	9.1	6.45	0.00	0.00	0.04	0.18	0.78
BDC-05-21	8/1/2017		2175		<0.2	<0.2	0.6	1.5	3.9	5.6	<1.0	0.009	0.009	<0.002	<0.002	2.53		2.8	1.1	4.9		13.9	6.11	0.00	0.00	0.02	0.07	0.92
BDC-05-21	11/7/2017		2273	-3	<0.2	<0.2	0.9	1.2	<1.0	2.5	<1.0	0.011	0.011	<0.002	<0.002	0.42		2.0	1.3	5.8	10.7	13.2	6.54	0.00	0.00	0.08	0.17	0.74
BDC-05-21	5/2/2018		2449	173	<0.2	<0.2	0.43	0.83	<1.14	<1.23	<1.06	0.008	0.008	<0.001	<0.001	0.10		4.0	7.32	9.1	5.6	4.95	6.40	0.00	0.00	0.25	0.75	0.00
BDC-05-21	11/7/2018		2638	362	<0.2	<0.2	0.20	0.72	<1.14	<1.23	<1.06	0.007	0.007	<0.001	<0.001	0.39		2.8	0.490	10.3	13.2	5.89	6.32	0.00	0.00	0.15	0.85	0.00
BDC-05-21	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.50	<1.14	<1.23	<1.06	0.009	0.009	<0.001	<0.001	0.18		4.6	2.19	5.1	-4.1	4.62	6.28	0.00	0.00	0.00	1.00	0.00
BDC-05-21	11/6/2019		3002	726	<0.2	<0.2	<0.2	0.32	<1.14	<1.23	<1.06	0.009	0.011	<0.001	<0.001	1.10		3.4	1.97	5.14	-82.4	6.95	6.28	0.00	0.00	0.00	1.00	0.00
BDC-05-21	5/5/2020		3183	907	<0.2	<0.2	<0.2	0.55	<1.14	<1.23	<1.06	0.007	0.007	<0.001	<0.001	0.51	<0.10	4.0	0.327	8.02	-46.0	7.43	6.38	0.00	0.00	0.00	1.00	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

Well	Date	Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
		Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-21	11/6/2020		3368	1092	<0.2	<0.2	<0.2	0.23	<1.14	<1.23	<1.06	0.006	0.006	<0.001	<0.001	0.70		2.4	0.689	5.20	4.3	5.49	6.22	0.00	0.00	0.00	1.00	0.00
BDC-05-21	5/5/2021		3548	1272	<0.20	<0.20	0.21	0.91	<1.14	<1.23	<1.06	0.012	0.011	0.0003	0.0005	0.39		4.5	0.171	5.46	-126.4	14.43	6.39	0.00	0.00	0.13	0.87	0.00
BDC-05-21	11/5/2021		3732	1456	<0.20	<0.20	<0.20	0.47	<1.14	<1.23	<1.06	0.007	0.007	0.0003	0.0003	0.44		2.5	0.487	5.21	45.5	8.4	6.53	0.00	0.00	0.00	1.00	0.00
BDC-05-21	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.40	<1.14	<1.23	<1.06	0.014	0.012	0.0011	<0.001	1.44		4.0	0.251	5.21	38.0	16.41	6.49	0.00	0.00	0.00	1.00	0.00
BDC-05-21	11/9/2022		4101	1825	<0.20	<0.20	<0.20	0.28	<1.14	<1.23	<1.06	0.017	0.019	0.0004	<0.001	0.47		6.8	1.39	3.53	25.9	5.75	6.32	0.00	0.00	0.00	1.00	0.00
BDC-05-22	7/31/2011		-18		<1.0	1.1	9.6	1.0	<1.1	<1.2	<1.1	0.025	0.024	<0.002	<0.002	2.02	<0.1	2.2	14.0	5.1	-59	7.9	7.21	0.00	0.07	0.80	0.13	0.00
(MW 48 ft XG)	11/3/2011		77		<1.0	2.1	10	<1.0				0.020	0.020	<0.002	<0.002	1.46	<0.1	0.8	18.1		19	6.1	7.08	0.00	0.13	0.87	0.00	
	2/19/2012		185		<0.2	2.0	13	0.4								0.43	<0.5	1.2	17.0		110	6.2	6.73	0.00	0.10	0.86	0.04	
BDC-05-22	5/7/2012		263		<0.2	2.0	11	0.5				0.025	0.023	0.002	<0.002	0.81		1.6	19.4		32	8.4	6.68	0.00	0.11	0.83	0.06	
BDC-05-22	9/5/2012		384		<0.2	1.8	9.5	0.8								0.06		2.2	14.7		75	7.6	6.71	0.00	0.11	0.79	0.10	
BDC-05-22	11/16/2012		456		<0.5	1.6	10	0.7				0.033	0.031	<0.002	<0.002	0.02		0.8	17.8		5	7.7	6.93	0.00	0.10	0.82	0.09	
BDC-05-22	2/26/2013		558		<0.2	1.3	9.4	1.2								0.09		1.6	10.1		23	7.5	6.92	0.00	0.08	0.77	0.15	
BDC-05-22	5/23/2013		644		<0.2	1.2	10	0.6				0.029	0.029	<0.002	<0.002	0.25		1.4	6.3		-233	8.7	7.63	0.00	0.07	0.85	0.08	
BDC-05-22	8/28/2013		741		<0.2	1.2	7.3	0.2								0.65			3.5		-322	8.9	6.69	0.00	0.10	0.86	0.04	
BDC-05-22	11/14/2013		819		<0.2	1.2	6.9	<0.2				0.028	0.027	<0.002	<0.002	1.96		1.5	5.9		-240	8.8	6.74	0.00	0.11	0.89	0.00	
BDC-05-22	2/12/2014		909		<0.2	0.7	5.7	<0.2								2.67		2.0	4.9		-224	7.3	6.88	0.00	0.08	0.92	0.00	
BDC-05-22	5/13/2014		999		<0.2	1.4	6.7	<0.2				0.027	0.025	<0.002	<0.002	3.16		1.5	8.7		-183	8.4	6.68	0.00	0.13	0.87	0.00	
BDC-05-22	8/6/2014		1084		<0.2	1.2	5.5	<0.2								4.59		1.6	10.9		-137	9.6	7.31	0.00	0.14	0.86	0.00	
BDC-05-22	11/10/2014		1180		<0.2	1.2	5.8	<0.2				0.031	0.031	<0.002	<0.002	0.05		1.4	19.2		-113	6.8	6.43	0.00	0.13	0.87	0.00	
BDC-05-22	1/21/2015		1252		<0.2	0.7	4.2	<0.2								0.30		1.0	1.2		-140	7.3	6.53	0.00	0.11	0.89	0.00	
BDC-05-22	4/27/2015		1348		<0.2	0.5	4.2	<0.2				0.025	0.026	0.004	<0.002	0.14		1.8	<0.30		-115	5.2	6.44	0.00	0.08	0.92	0.00	
BDC-05-22	7/21/2015		1433		<0.2	0.7	5.5	<0.2								0.12		1.0	4.4		-47	6.1	6.38	0.00	0.09	0.91	0.00	
BDC-05-22	10/27/2015		1531		<0.2	0.6	4.5	<0.2				0.030	0.027	<0.002	<0.002	0.09		1.0	4.2		-50	6.9	6.59	0.00	0.09	0.91	0.00	
BDC-05-22	1/26/2016		1622		<0.2	0.9	7.1	<0.2								0.28		1.4	8.5		-109	6.8	6.55	0.00	0.09	0.91	0.00	
BDC-05-22	4/21/2016		1708		<0.2	0.9	7.3	<0.2				0.035	0.034	<0.002	<0.002	0.79		1.0	22.4		-39	6.0	6.44	0.00	0.08	0.92	0.00	
BDC-05-22	8/9/2016		1818		<0.2	1.1	6.2	1.5				0.029	0.030	<0.002	<0.002	0.04		2.2	6.6		-60.8	6.2	6.50	0.00	0.09	0.66	0.25	
BDC-05-22	11/3/2016		1904		<0.2	0.3	7.0	0.8				0.025	0.025	<0.002	0.004	0.60		0.8	0.57		-126.9	5.7	6.66	0.00	0.03	0.83	0.15	
BDC-05-22	2/8/2017		2001		<0.2	0.3	8.4	<0.2				0.026	0.026	<0.002	<0.002	0.54		3.4	0.3		-23.5	5.9	6.27	0.00	0.03	0.97	0.00	
BDC-05-22	5/4/2017		2086		<0.2	0.6	9.4	<0.2				0.028	0.030	<0.002	<0.002	0.24		2.6	6.6		-128	6.0	6.57	0.00	0.04	0.96	0.00	
BDC-05-22	8/1/2017		2175		<0.2	0.7	9.1	<0.2				0.032	0.030	<0.002	<0.002	1.88		2.6	1.8		-85.1	6.3	6.28	0.00	0.05	0.95	0.00	
BDC-05-22	11/7/2017		2273	-3	<0.2	<0.2	6.7	<0.2				0.021	0.021	<0.002	<0.002	0.55		1.6	<0.30		-0.8	5.9	6.60	0.00	0.00	1.00	0.00	
BDC-05-22	5/2/2018		2449	173	<0.2	0.55	10.6	1.02				0.033	0.032	<0.001	<0.001	0.90		3.4	10.9		-88.1	5.7	6.49	0.00	0.03	0.84	0.13	
BDC-05-22	11/7/2018		2638	362	<0.2	0.39	11.9	1.25				0.028	0.030	0.005	<0.001	0.30		3.2	2.12		-29.0	5.39	6.47	0.00	0.02	0.84	0.14	
BDC-05-22	5/2/2019		2814	538	<0.2	0.54	6.48	1.02				0.043	0.039	<0.001	<0.001	0.23		3.7	2.43		-80.6	9.83	6.56	0.00	0.05	0.77	0.19	
BDC-05-22	11/6/2019		3002	726	<0.2	0.35	4.87	0.69				0.043	0.043	<0.001	<0.001	1.71		4.0	1.12		-133.1	9.35	6.53	0.00	0.04	0.79	0.17	
BDC-05-22	5/5/2020		3183	907	<0.2	0.33	4.68	0.80				0.050	0.049	<0.001	<0.001	0.45	<0.10	4.5	<0.100		-52.8	9.06	6.51	0.00	0.04	0.76	0.20	
BDC-05-22	11/6/2020		3368	1092	<0.2	<0.2	1.78	1.00				0.036	0.034	<0.001	<0.001	0.55		1.8	0.152		-11.3	6.72	6.47	0.00	0.00	0.53	0.47	
BDC-05-22	5/5/2021		3548	1272	<0.20	<0.20	3.38	2.26				0.048	0.049	<0.001	0.0004	0.40		4.0	<0.100		-121.2	10.12	6.51	0.00	0.00	0.49	0.51	
BDC-05-22	11/5/2021		3732	1456	<0.20	<0.20	1.10	1.94				0.026	0.024	0.0002	<0.001	0.30		4.5	<0.100		44.0	6.0	6.58	0.00	0.00	0.27	0.73	
BDC-05-22	5/10/2022		3918	1642	<0.20	<0.20	2.91	2.42				0.057	0.052	<0.005	<0.005	0.80		4.0	0.127		30.4	12.86	6.56	0.00	0.00	0.44	0.56	
BDC-05-22	11/8/2022		4100	1824	<0.20	<0.20	2.33	4.13				0.039	0.040	0.0003	0.0003	0.42		4.8	1.85		28.3	11.33	6.53	0.00	0.00	0.27	0.73	
BDC-05-23	7/31/2011		-18		<1.0	<1.0	3.2	<1.0	<1.1	<1.2	<1.1	0.005	0.005	0.002	<0.002	2.72	<0.1	2.2	8.6	6.0	-101	9.1	7.47	0.00	0.00	1.00	0.00	0.00
(MW 170ft DG)	11/3/2011		77		<1.0	<1.0	4.8	<1.0				0.005	0.006	<0.002	<0.002	1.45	<0.1	1.0	25.2		1	8.8	7.08	0.00	0.00	1.00	0.00	
	2/19/2012		185		<0.2	0.6	4.7	0.7								0.96	<0.5	1.2	8.9		162	8.1	6.33	0.00	0.07	0.75	0.17	
BDC-05-23	5/7/2012		263		<0.2	0.7	5.4	0.8				0.008	0.008	<0.002	<0.002	0.07		2.0	15.8		45	9.3	6.70	0.00	0.07	0.75	0.17	
BDC-05-23	9/5/2012		384		<0.2	0.7	6.2	0.9								0.08		1.9	8.8		78	11.3	6.84	0.00	0.06	0.76	0.17	
BDC-05-23	11/16/2012		456		<0.5	0.8	6.9	0.5				0.012	0.010	<0.002	<0.002	0.09		1.0	4.9		-6	11.6	7.06	0.00	0.07	0.83	0.09	
BDC-05-23	2/25/2013		557		<0.2	0.5	4.2	1.0								0.08		1.5	0.87		72	9.2	6.91	0.00	0.06	0.69	0.25	
BDC-05-23	5/23/2013		644		<0.2	0.5	4.7	1.0				0.015	0.015	<0.002	<0.002	0.31		1.2	1.7		-234	11.0	7.59	0.00	0.06	0.71	0.23	
BDC-05-23	8/28/2013		741		<1.0	2.2	21	5.4								0.60		0.5	0.35		-323	10.4	6.76	0.00	0.05	0.68	0.27	
BDC-05-23	11/14/2013		819		<0.2	0.3	3.0	0.9				0.017	0.015	<0.002	<0.002	1.58		1.3	0.62		-252	11.1	6.87	0.00	0.05	0.65	0.30	
BDC-05-23	2/12/2014		909		<0.2	0.2	2.7	1.2								2.40		1.8	0.74		-229	9.3	6.86	0.00	0.03	0.57	0.40	
BDC-05-23	5/13/2014		999		<0.2	0.3	4.5	1.0				0.023	0.023	<0.002	<0.002	3.15		1.4	3.1		-207	12.1	6.97	0.00	0.04	0.72	0.25	

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

		Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
Well	Date	Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-23	8/6/2014		1084		<0.2	0.3	4.2	1.2								4.49		1.2	2.7		-149	13.3	7.35	0.00	0.04	0.67	0.30	
BDC-05-23	11/10/2014		1180		<0.2	0.3	3.9	1.0				0.023	0.021	<0.002	<0.002	0.10		1.6	1.9		-122	10.1	6.40	0.00	0.04	0.69	0.27	
BDC-05-23	1/21/2015		1252		<0.2	<0.2	2.8	1.7								0.13		1.4	0.66		-144	9.5	6.49	0.00	0.00	0.51	0.49	
BDC-05-23	4/27/2015		1348		<0.2	<0.2	2.9	2.4				0.022	0.021	<0.002	<0.002	0.19		1.6	0.74		-114	7.5	6.40	0.00	0.00	0.44	0.56	
BDC-05-23	7/20/2015		1432		<0.2	<0.2	1.5	2.7								0.22		0.9	<0.30		-84	7.1	6.40	0.00	0.00	0.26	0.74	
BDC-05-23	10/27/2015		1531		<0.2	<0.2	2.1	1.6				0.021	0.020	<0.002	<0.002	0.18		1.4	0.46		-55	7.9	6.64	0.00	0.00	0.46	0.54	
BDC-05-23	1/26/2016		1622		<0.2	<0.2	4.9	0.9								0.50			2.2		-112	7.8	6.44	0.00	0.00	0.78	0.22	
BDC-05-23	4/21/2016		1708		<0.2	<0.2	4.0	1.4				0.024	0.023	<0.002	<0.002	0.28		0.6	3.0		-72	6.3	6.83	0.00	0.00	0.65	0.35	
BDC-05-23	8/9/2016		1818		<0.2	<0.2	3.2	1.1				0.026	0.025	<0.002	<0.002	0.03		1.8	2.8		-80.3	7.3	6.64	0.00	0.00	0.65	0.35	
BDC-05-23	11/3/2016		1904		<0.2	<0.2	3.7	0.5				0.023	0.023	0.003	<0.002	0.62		0.6	4.2		-122.2	7.4	6.73	0.00	0.00	0.83	0.17	
BDC-05-23	2/7/2017		2000		<0.2	<0.2	2.1	1.3				0.016	0.016	<0.002	<0.002	0.62		3.0	2.2		-65.0	7.1	6.70	0.00	0.00	0.51	0.49	
BDC-05-23	5/3/2017		2085		<0.2	<0.2	2.0	0.5				0.026	0.026	<0.002	<0.002	0.80		2.0	10.9		-37.3	7.2	6.52	0.00	0.00	0.72	0.28	
BDC-05-23	8/1/2017		2175		<0.2	<0.2	0.9	0.5				0.017	0.019	<0.002	<0.002	1.00		2.2	4.7		-20.5	6.7	6.15	0.00	0.00	0.54	0.46	
BDC-05-23	11/7/2017		2273	-3	<0.2	<0.2	2.6	1.8				0.025	0.025	<0.002	<0.002	0.44		3.2	2.0		10.5	7.5	6.61	0.00	0.00	0.48	0.52	
BDC-05-23	5/2/2018		2449	173	<0.2	<0.2	0.31	<0.2				0.026	0.026	0.001	<0.001	0.51		1.4	11.4		30	5.6	6.45	0.00	0.00	1.00	0.00	
BDC-05-23	11/7/2018		2638	362	<0.2	<0.2	1.66	1.61				0.022	0.022	0.001	<0.001	0.33		1.2	2.97		-23.5	6.23	6.58	0.00	0.00	0.40	0.60	
BDC-05-23	5/2/2019		2814	538	<0.2	<0.2	2.00	1.30				0.035	0.028	0.001	<0.001	0.28		5.0	12.7		-83.4	6.27	6.67	0.00	0.00	0.50	0.50	
BDC-05-23	11/5/2019		3001	725	<0.2	<0.2	1.42	1.46				0.021	0.022	<0.001	<0.001	0.51		4.8	4.07		-117.4	6.92	6.66	0.00	0.00	0.39	0.61	
BDC-05-23	5/5/2020		3183	907	<0.2	<0.2	0.83	1.62				0.015	0.017	<0.001	<0.001	0.87	<0.10	5.0	0.419		-67.1	6.29	6.37	0.00	0.00	0.25	0.75	
BDC-05-23	11/5/2020		3367	1091	<0.2	<0.2	0.71	0.98				0.014	0.020	<0.001	<0.001	0.66		3.8	1.24		-36.3	6.69	6.51	0.00	0.00	0.32	0.68	
BDC-05-23	5/5/2021		3548	1272	<0.20	<0.20	0.87	1.36				0.023	0.022	<0.001	0.0003	0.57		6.0	1.06		-132.9	6.71	6.75	0.00	0.00	0.29	0.71	
BDC-05-23	11/5/2021		3732	1456	<0.20	<0.20	0.44	0.72				0.019	0.018	<0.001	<0.001	0.21		7.0	0.62		41.9	6.4	6.64	0.00	0.00	0.28	0.72	
BDC-05-23	5/10/2022		3918	1642	<0.20	<0.20	0.36	1.14				0.018	0.017	<0.001	<0.001	0.59		4.0	0.686		15.4	6.99	6.67	0.00	0.00	0.17	0.83	
BDC-05-23	11/10/2022		4102	1826	<0.20	<0.20	0.27	0.77				0.014	0.017	0.0002	<0.001	0.36		6.0	<0.100		25.4	7.37	6.76	0.00	0.00	0.18	0.82	
BDC-05-24	7/31/2011		-18		<1.0	<1.0	1.6	1.6	<1.1	<1.2	<1.1	0.003	0.003	<0.002	<0.002	1.67	<0.1	2.0	1.1	7.6	-7	10.0	7.06	0.00	0.00	0.39	0.61	0.00
(MW 18 ft XG)	11/1/2011		75		<1.0	2.0	4.0	2.2				0.002	0.002	<0.002	<0.002	1.50	<0.1	1.6	0.3		-2.6	8.1	7.06	0.00	0.17	0.45	0.38	
	2/19/2012		185		<0.2	0.2	0.7	0.8								0.31	<0.5	1.8	<1.5		63	9.8	6.55	0.00	0.07	0.34	0.59	
BDC-05-24	5/6/2012		262		<0.2	1.3	2.8	1.0				0.006	0.004	<0.002	<0.002	0.03			0.9		73	9.1	6.60	0.00	0.18	0.53	0.29	
BDC-05-24	9/5/2012		384		<0.2	1.2	4.0	0.9								0.08		2.0	<0.3		67	7.4	6.67	0.00	0.14	0.64	0.22	
BDC-05-24	11/15/2012		455		<0.5	<0.5	1.2	<0.5				0.002	0.003	<0.002	<0.002	0.13		1.0	<0.3		-1.7	10.7	6.94	0.00	0.00	1.00	0.00	
BDC-05-24	2/25/2013		557		<0.2	0.7	5.1	1.9	1.1	<1.2	<1.0					0.10		1.5	1.1	9.1	87	7.2	6.72	0.00	0.04	0.41	0.24	0.31
BDC-05-24	5/22/2013		643		<0.2	0.8	7.6	2.1				0.004	0.003	<0.002	<0.002	0.58		1.4	0.82		-272	7.4	7.54	0.00	0.05	0.66	0.28	
BDC-05-24	8/28/2013		741		<0.2	0.5	4.4	1.6	<1.0	1.8	<1.0					0.78		1.4	0.47	11.0	-321	8.6	6.57	0.00	0.03	0.34	0.19	0.44
BDC-05-24	11/13/2013		818		<0.2	0.4	3.3	1.4	<1.0	1.4	<1.0	0.003	0.003	<0.002	<0.002	2.43		1.3	1.4	11.0	-219	8.7	6.54	0.00	0.03	0.32	0.21	0.44
BDC-05-24	2/12/2014		909		<0.2	0.2	1.7	0.6	1.1	3.0	<1.0					2.72		2.0	0.81	11.0	-211	7.1	6.76	0.00	0.01	0.10	0.06	0.83
BDC-05-24	5/12/2014		998		<0.2	0.3	4.8	1.6	1.0	2.3	<1.0	0.003	0.002	<0.002	<0.002	2.58		1.2	0.87	10.0	-196	8.2	6.75	0.00	0.01	0.26	0.14	0.59
BDC-05-24	8/6/2014		1084		<0.2	0.2	2.8	1.8	3.6	2.3	<1.0					4.02		1.0	0.36	9.6	-167	9.5	7.33	0.00	0.01	0.11	0.11	0.78
BDC-05-24	11/10/2014		1180		<0.2	<0.2	6.2	12	2.0	<1.0	<1.0	0.001	0.001	<0.002	<0.002	0.05		1.2	1.8	0.97	-86	4.2	6.52	0.00	0.00	0.20	0.59	0.22
BDC-05-24	1/21/2015		1252		<0.2	0.4	2.1	1.6	2.5	<1.0	<1.0					0.14		2.0	2.3	5.4	-65	3.8	6.31	0.00	0.02	0.16	0.18	0.64
BDC-05-24	4/27/2015		1348		<0.2	0.5	0.9	2.5	2.5	<1.0	<1.0	0.003	0.003	<0.002	<0.002	0.08		0.8	0.97	3.2	-27	3.2	6.22	0.00	0.03	0.07	0.28	0.63
BDC-05-24	7/21/2015		1433		<0.2	0.3	1.3	3.9	<1.0	<1.0	<1.0					0.09		1.8	6.2	0.45	-23	2.2	6.27	0.00	0.03	0.17	0.80	0.00
BDC-05-24	10/28/2015		1532		<0.2	0.5	0.7	1.3	<1.0	<1.0	<1.0	0.003	0.004	<0.002	<0.002	0.47		1.0	5.1	1.4	-3.1	2.9	6.54	0.00	0.12	0.23	0.65	0.00
BDC-05-24	1/26/2016		1622		<0.2	<0.2	0.4	1.9	<1.0	1.2	<1.0					0.34		1.0	0.43	12.0	-76	8.3	6.47	0.00	0.00	0.06	0.41	0.54
BDC-05-24	4/20/2016		1707		<0.2	0.2	0.5	0.7	<1.0	1.8	<1.0	0.004	0.002	<0.002	<0.002	0.28			1.3	7.5	-3.8	4.6	6.44	0.00	0.02	0.07	0.14	0.77
BDC-05-24	8/9/2016		1818		<0.2	0.7	1.9	2.2	3.6	3.6	<1.0	0.005	0.003	<0.002	<0.002	0.15			2.2	6.0	-34.6	2.6	5.85	0.00	0.02	0.06	0.11	0.80
BDC-05-24	11/3/2016		1904		<0.2	0.2	0.7	0.8	1.9	1.3	<1.0	0.002	0.002	<0.002	<0.002	0.34		1.8	0.80	12.0	-86.4	4.9	5.95	0.00	0.01	0.05	0.10	0.84
BDC-05-24	2/8/2017		2001		<0.2	0.3	1.3	2.1	2.7	3.2	<1.0	0.003	0.002	<0.002	0.004	0.34		2.2	1.8	5.9	-6.4	4.0	6.41	0.00	0.01	0.05	0.13	0.80
BDC-05-24	5/4/2017		2086		<0.2	<0.2	0.4	0.5	<1.0	3.7	<1.0	0.004	0.003	<0.002	<0.002	0.20		2.4	1.5	5.9	-36.4	4.8	6.22	0.00	0.00	0.03	0.06	0.91
BDC-05-24	8/1/2017		2175		<0.2	<0.2	0.4	0.5	1.1	<1.0	<1.0	0.003	0.002	<0.002	<0.002	0.11		2.0	1.3	11.0	-51.1	5.7	5.92	0.00	0.00	0.08	0.16	0.76
BDC-05-24	11/7/2017		2273	-3	<0.2	<0.2	<0.2	0.5	<1.0	1.3	<1.0	0.002	0.001	<0.002	<0.002	0.37		1.8	<0.30	12.0	-10.7	8.4	6.42	0.00	0.00	0.00	0.16	0.84
BDC-05-24	5/2/2018		2449	173	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.001	0.001	<0.001	<0.001	1.13		3.2	<0.1	7.24	-106.1	10.9	6.49	NA	NA	NA	NA	NA
BDC-05-24	11/6/2018		2637	361	<0.2	<0.2	0.26	0.66	<1.14	<1.23	<1.06	0.002	0.002	<0.001	<0.001	0.30		5.0	<0.100	17.0	-56.4	12.51	6.23	0.00	0.00	0.20	0.80	0.00
BDC-05-24	5/2/2019		2814	538	<0.2	<0.2	<0.2	0.42	<1.14	<1.23	<1.06	0.001	0.001	<0.001	<0.001	0.36		5.2	0.379	12.7	-66.1	11.40	6.41	0.00	0.00	0.00	1.00	0.00
BDC-05-24	11/5/2019		3001	725	<0.2	<0.2	<0.2	0.39	<1.14	<1.23	<1.06	0.002	0.002	0.0004	<0.001	4.10		1.7	0.515	8.92	-103.7	11.80	6.50	0.00	0.00	0.00	1.00	0.00

Table 3
SWMU-17 Groundwater Data Cleanup Action Summary
Boeing Developmental Center
Tukwila, Washington

Well	Date	Time Elapsed (days)			Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators		Molar Fraction (b)				
		Pilot Test	Full-Scale Injection #1	Full-Scale Injection #2	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	Acetylene (µg/L)	As, Tot (mg/L)	As, Diss (mg/L)	Cu, Tot (mg/L)	Cu, Diss (mg/L)	DO (mg/L)	Nitrate-Nitrogen (mg/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)	TOC (mg/L)	pH	PCE	TCE	cDCE	VC	Ethene + Ethane
Proposed Groundwater Cleanup Levels (a):					5.3	1.4	134	2.4	---	---	---	0.008	0.008	0.008	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
BDC-05-24	5/6/2020		3184	908	<0.2	<0.2	<0.2	0.38	<1.14	<1.23	<1.06	0.004	0.004	<0.001	0.0005	1.32		3.0	0.326	8.56	-8.7	12.76	6.14	0.00	0.00	0.00	1.00	0.00
BDC-05-24	11/6/2020		3368	1092	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	<1.06	0.001	0.001	<0.001	<0.001	0.24		4.0	0.193	9.88	-4.6	9.93	6.46	NA	NA	NA	NA	NA
BDC-05-24	5/5/2021		3548	1272	<0.20	<0.20	<0.20	0.32	<1.14	<1.23	<1.06	0.007	0.006	0.0002	0.0002	0.35		6.6	0.498	5.97	-87.1	9.04	6.36	0.00	0.00	0.00	1.00	0.00
BDC-05-24	11/8/2021		3735	1459	<0.20	<0.20	<0.20	0.33	<1.14	<1.23	<1.06	0.005	0.004	0.0004	<0.001	0.37		6.5	<0.100	6.65	91.8	8.1	6.53	0.00	0.00	0.00	1.00	0.00
BDC-05-24	5/10/2022		3918	1642	<0.20	<0.20	<0.20	0.38	<1.14	<1.23	<1.06	0.006	0.006	<0.001	0.0004	1.97		4.0	0.130	7.44	65.0	7.34	6.52	0.00	0.00	0.00	1.00	0.00
BDC-05-24	11/16/2022		4108	1832	<0.20	<0.20	<0.20	0.44	<1.14	<1.23	<1.06	0.003	0.002	0.001	<0.001	0.31		3.5	<0.100	9.01	-16.2	6.97	6.70	0.00	0.00	0.00	1.00	0.00

Abbreviations and Acronyms:

PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
As = arsenic
Cu = copper
Tot = total
Dis = dissolved
DO = dissolved oxygen
ORP = oxidation reduction potential
TOC = total organic carbon
NA = not applicable, not available
µg/L = micrograms per liter
mg/L = milligrams per liter
IW = Injection Well
MW = Monitoring Well
DG = Downgradient; distance from nearest injection well
UG = Upgradient; distance from nearest injection well
XG = Crossgradient; distance from nearest injection well

Notes:

(a) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).
(b) Indicates the fraction of total ethenes (PCE+TCE+cDCE+VC+ethene/ethane) due to each individual compound on a molar basis.

Box = exceedance of proposed cleanup level

= not analyzed
= Highlights the predominant ethene

Injection Dates:

10/28/08 Pilot Injection: BDC-05-02 only
08/18/11 Full Injection #1: BDC-05-02, BDC-05-07, and BDC-05-09 through BDC-05-17; performed 8/15/11-8/18/11
11/10/17 Full Injection #2: BDC-05-02, BDC-05-03, BDC-05-04, BDC-05-07, and BDC-05-10; performed 11/7/17-11/10/2017

Table 4
SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
06A (c)	06/15/2004	-2					<1.0	**1.0**	**23**	**4.0**	<0.50	<0.50	6.34	-19.6	0.8	58.9	<0.50	6.5	18.8
06A (c)	08/23/2004	67					<1.0	<1.0	**45**	**5.9**	<0.50	<0.50	0.46	92	3.5	40.7	21	7.0	288
06A (c)	10/19/2004	124	-58				<1.0	<1.0	**2.6**	**31**	<0.50	<0.50	0.70	54	3.0	44.8	530	6.8	80.8
06A (c)	02/22/2005	250	68				<1.0	<1.0	**3.3**	<1.0	<0.50	<0.50	1.15	187	2.4	<0.1	130	6.8	244
06A (c)	05/16/2005	333	151				<1.0	<1.0	**2.6**	<1.0	<0.50	<0.50	1.25	58	3.0	0.1	10000	6.9	145
06A (c)	08/22/2005	431	249				<1.0	<1.0	**1.6**	<1.0	<0.50	<0.50	1.26	212	2.7	3.1	390	6.8	54.2
06A (c)	11/14/2005	515	333				<1.0	<1.0	**1.3**	**1.2**	<0.50	<0.50	0.93	108	3.0	0.1	3700	6.9	31.8
06A (c)	02/22/2006	615	433				<1.0	<1.0	**1.4**	**4.8**	<11.4	<12.3	0.80	186	2.6	60.4	10100	6.4	15.5
06A (c)	05/18/2006	700	518				<1.0	<1.0	<1.0	**1.6**	<11	<12	6.41	1	3.0	20.9	16000	6.6	23.9
06A (c)	08/16/2006	790	608				<1.0	<1.0	<1.0	**1.5**	<1.1	<1.2	0.89	240	2.2	23.1	18800	6.5	23.2
06A (c)	11/29/2006	895	713				<0.2	<0.2	**0.4**	**2.1**	<1.1	<1.2	2.09	102	2.6	33.1	20200	6.5	31.4
06A (c)	02/23/2007	981	799				<1.0	<1.0	<1.0	**6.7**	<1.1	<1.2	0.65	-97	4.5	26.2	17400	6.5	24.6
06A (c)	05/24/2007	1071	889				<1.0	<1.0	<1.0	**2.9**	<1.1	**2.0**	0.56	184	4.0	21.0	18300	6.7	21.5
06A (c)	11/30/2007	1261	1079				<0.2	<0.2	<0.2	**1.2**	<1.1	**2.2**	0.80	173	3.0	29.1	21900	6.7	22.6
06A (c)	05/21/2008	1434	1252		-96		<1.0	<1.0	<1.0	**1.4**	<1.1	**1.3**	2.11	-82	2.5	21.0	13200	6.9	20.1
06A (c)	11/25/2008	1622	1440		92		<1.0	<1.0	**1.7**	<1.0	<1.1	<1.2	1.71	-73	3.4	0.1	19700	6.5	150
06A (c)	05/20/2009	1798	1616		268		<4.0	<4.0	<4.0	<4.0	<1.1	<1.2	0.52	-45	4.0	<0.5	19500	6.8	38.2
06A (c)	11/19/2009	1981	1799		451		<1.0	<1.0	**1.9**	<1.0	<1.1	<1.2	2.66	6	2.8	0.8	20100	6.2	25.4
06A (c)	5/24/2010	2167	1985		637		<1.0	<1.0	**1.3**	**1.9**	<1.1	<1.2	3.56	448	2.0	16	19900	6.6	19.3
06A (c)	11/11/2010	2338	2156		808		<1.0	<1.0	<1.0	**1.7**	<1.1	<1.2	4.75	106	2.6	0.4	24700	7.0	20.2
06A (c)	5/4/2011	2512	2330		982		<1.0	<1.0	<1.0	**1.4**	<1.1	<1.2	2.14	22	2.5	<0.2	21400	7.1	13.6
06A (c)	11/13/2011	2705	2523		1175		<0.2	<0.2	**0.3**	**0.8**	<1.1	<1.2	5.80	-54	1.0	0.3	6370	7.2	12.7
06A (c)	5/15/2012	2889	2707		1359		<0.2	<0.2	**0.4**	**1.2**	<1.0	<1.0	0.08	66	2.0	4.3	13000	6.7	11.6
06A (c)	11/14/2012	3072	2890		1542		<0.2	<0.2	**0.3**	**0.8**	<1.0	<4.0	0.02	-0.5	1.5	<0.30	13000	6.9	9.0
06A (c)	5/21/2013	3260	3078		1730		<0.5	<0.5	<0.5	**1.3**	<1.0	<1.0	0.17	-434	2.6	3.3	5200	7.9	8.8
06A (c)	11/12/2013	3435	3253		1905		<0.2	<0.2	**0.4**	**2.4**	<1.0	<1.0	2.68	-298	1.2	5.8	3500	6.8	8.3
06A (c)	5/7/2014	3611	3429		2081		<0.2	<0.2	**0.4**	**1.5**	<1.0	<1.0	3.60	-386	1.5	11.2	1300	7.1	7.2
06A (c)	11/5/2014	3793	3611		2263		<0.2	<0.2	**0.4**	**2.7**	<1.0	<1.0	0.28	-89	1.0	13.9	770	6.7	7.2
06A (c)	4/29/2015	3968	3786		2438		<0.2	<0.2	**0.6**	**3.3**	<1.0	<1.0	0.36	-54	3.0	17.5	430	6.7	5.2
06A (c)	10/26/2015	4148	3966		2618	-16	<0.2	<0.2	**0.2**	**2.5**	<1.0	<1.0	0.17	-66	0.8	19.7	410	6.6	6.5
06A (c)	4/19/2016	4324	4142		2794	160	<0.2	<0.2	**1**	**0.7**	<100	<100	0.06	-118	1.0	<0.30	18000	7.0	203
06A (c)	11/1/2016	4520	4338		2990	356	<0.2	<0.2	**0.5**	**0.7**	<100	<100	0.35	-154.9	NM	0.47	20000	7.1	121
06A (c)	5/2/2017	4702	4520		3172	538	<0.2	<0.2	**0.3**	**0.4**	<1.0	**1.4**	0.26	-151.5	NM	<0.30	18000	7.2	124
06A (c)	11/8/2017	4892	4710		3362	728	<0.2	<0.2	**0.3**	**0.3**	<1.0	**3.4**	0.41	-56.1	NM	16.1	13000	7.1	99.5
06A (c)	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	0.15	-28.7	NM	0.342	6130	7.2	149.3
06A (c)	11/6/2018	5255	5073		3725	1091	<0.2	<0.2	<0.2	<0.2	<1.14	**1.55**	0.50	-61.9	NM	0.476	5090	7.0	116.1
06A (c)	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	<0.2	<0.2	<1.14	**1.80**	0.42	-88.6	NM	1.09	4220	7.1	102.7
06A (c)	11/6/2019	5620	5438		4090	1456	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	0.58	-105.6	NM	3.12	1730	6.9	410.2
06A (c)	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	**0.22**	**0.5**	<1.14	<1.23	1.58	-48.0	NM	9.64	652	6.9	79.14
06A (c)	11/5/2020	5985	5803		4455	1821	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	1.57	-64.8	NM	1.71	1060	7.0	15.48

Table 4
SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
06A (c)	5/4/2021	6165	5983		4635	2001	<0.2	<0.2	**0.23**	**0.46**	<1.14	<1.23	1.21	-113.6	NM	22.3	739	6.95	28.13
06A (c)	11/3/2021	6348	6166		4818	2184	<0.20	**0.30**	**0.21**	**0.32**	<1.14	<1.23	0.89	45.3	NM	22.8	683	6.85	8.9
06A (c)	5/9/2022	6535	6353		5005	2371	<0.20	**0.37**	**0.71**	**0.52**	<1.14	<1.23	1.24	46.9	NM	34.2	303	6.85	13.53
06A (c)	11/8/2022	6718	6536		5188	2554	<0.20	<0.20	**0.79**	**0.68**	<1.14	<1.23	1.27	17.3	NM	35.8	416	6.55	8.80
06B	05/04/2004	-44					**9.5**	**3.2**	**10**	**9.4**	<0.50	<0.50	0.36	179	4.5	18.7	130	6.8	25.6
06B	08/23/2004	67					**1.9**	**1.2**	**13**	**2.3**	<0.50	<0.50	0.45	115	3.2	33.8	1100	6.9	177
06B	10/19/2004	124	-58				<1.0	<1.0	**10**	**3.6**	<0.50	<0.50	0.61	217	3.5	14.8	590	6.7	53.6
06B	02/22/2005	250	68				<1.0	<1.0	**11**	<1.0	<0.50	<0.50	0.79	224	2.6	<0.5	3800	6.9	968
06B	05/16/2005	333	151				<2.0	<2.0	**5.5**	<2.0	<0.50	<0.50	1.51	133	3.5	<0.5	2300	6.9	336
06B	08/22/2005	431	249				<1.0	<1.0	**1.8**	**1.6**	<0.50	<0.50	1.21	217	2.8	<0.1	440	6.9	100
06B	11/14/2005	515	333				<1.0	<1.0	**1.1**	**1.3**	<0.50	<0.50	1.05	241	2.8	<0.1	2900	6.9	64.4
06B	02/22/2006	615	433				<1.0	<1.0	<1.0	**1.4**	**53.5**	<12.3	0.74	184	2.6	14.8	13000	6.4	30.4
06B	05/18/2006	700	518				<1.0	<1.0	<1.0	**1.3**	<11	<12	2.25	52	3.2	13.6	16000	6.6	25.9
06B	08/16/2006	790	608				<1.0	<1.0	<1.0	**1.1**	<1.1	<1.2	0.82	225	2.4	12.9	21700	6.5	14.7
06B	11/29/2006	895	713				<0.2	<0.2	**1.4**	**2.6**	<1.1	<1.2	1.82	111	2.4	10.9	22000	6.5	25.2
06B	02/23/2007	981	799				<1.0	<1.0	**3.8**	**9.5**	<1.1	<1.2	0.75	-66	5.0	25.0	17700	6.5	21.1
06B	05/24/2007	1071	889				<1.0	<1.0	**1.4**	**6.5**	<1.1	<1.2	0.58	151	3.0	11.3	18500	6.6	21.4
06B	11/30/2007	1261	1079				<0.2	<0.2	<0.2	**1.0**	<1.1	**4.0**	0.83	135	4.0	26.3	24900	6.4	26.5
06B	05/21/2008	1434	1252		-96		<1.0	<1.0	<1.0	<1.0	<1.1	**4.9**	2.66	-61	3.4	21.1	12700	6.7	20.4
06B	11/25/2008	1622	1440		92		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	2.53	-68	2.4	0.2	18400	6.6	19.6
06B	05/20/2009	1798	1616		268		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.33	-36	4.0	<0.5	25300	6.9	20.9
06B	11/19/2009	1981	1799		451		<1.0	<1.0	<1.0	<1.0	<1.1	**6.7**	1.01	10	2.8	0.1	22500	6.9	20.0
06B	5/24/2010	2167	1985		637		<1.0	<1.0	<1.0	**4.2**	<1.1	**1.6**	3.05	417	2.0	3.0	7110	7.0	19.1
06B	11/11/2010	2338	2156		808		<1.0	<1.0	<1.0	**5.4**	<1.1	**1.4**	3.40	112	2.0	8.6	4600	7.1	15.8
06B	5/4/2011	2512	2330		982		<1.0	<1.0	<1.0	**5.2**	<1.1	<1.2	2.55	57	2.2	19.7	2120	7.1	12.6
06B	11/13/2011	2705	2523		1175		<0.2	<0.2	<0.2	**0.8**	<1.1	<1.2	6.10	-34	1.5	0.3	2260	7.3	14.8
06B	5/15/2012	2889	2707		1359		<0.2	<0.2	**0.5**	**6.0**	<1.0	**1.3**	0.14	71	1.8	10.9	2200	6.6	11.4
06B	11/14/2012	3072	2890		1542		<0.2	<0.2	<0.2	**3.7**	<1.0	**1.8**	0.02	10	2.0	7.0	2300	6.8	13.7
06B	5/21/2013	3260	3078		1730		<0.5	<0.5	<0.5	**4.3**	<1.0	<1.0	0.17	-427	2.5	20.1	720	7.7	11.0
06B	11/12/2013	3435	3253		1905		<0.2	<0.2	<0.2	**2.5**	<1.0	<1.0	2.62	-309	1.5	4.0	350	7.0	15.5
06B	5/7/2014	3611	3429		2081		<0.2	<0.2	<0.2	**2.4**	<1.0	<1.0	3.50	-320	1.6	2.8	1200	7.1	10.2
06B	11/5/2014	3793	3611		2263		<0.2	<0.2	<0.2	**1.8**	<1.0	<1.0	0.30	-54	1.7	4.7	2200	6.8	6.9
06B	4/29/2015	3968	3786		2438		<0.2	<0.2	<0.2	**1.8**	<1.0	<1.0	0.52	-39	1.0	0.99	1300	6.6	4.0
06B	10/26/2015	4148	3966		2618	-16	<0.2	<0.2	<0.2	**1.0**	<1.0	<1.0	0.99	-39	1.0	2.0	1900	6.6	4.9
06B	4/19/2016	4324	4142		2794	160	<2.0	<2.0	<2.0	<2.0	<100	<100	0.06	-78	NM	0.3	17000	6.8	306
06B	11/1/2016	4520	4338		2990	356	<0.2	<0.2	**0.5**	**0.2**	<100	<100	0.32	-148.5	NM	0.71	23000	7.24	274
06B	5/2/2017	4702	4520		3172	538	<0.2	<0.2	<0.2	**0.3**	<1.0	<1.0	0.17	-129.6	NM	1.3	21000	7.38	149
06B	11/8/2017	4892	4710		3362	728	<0.2	<0.2	<0.2	**0.6**	<1.0	**2.4**	0.10	-45.5	NM	<30.0	18000	6.88	320
06B	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	1.05	14.0	NM	<0.5	5370	6.71	4147
06B	11/6/2018	5255	5073		3725	1091	<0.2	<0.2	<0.2	<0.2	<1.14	<1.23	3.43	69.4	NM	1.01	4870	6.51	1740

Table 4
SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
06B	5/1/2019	5431	5249		3901	1267	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	1.18	20.6	NM	7.87	4510	6.67	4692
06B	11/20/2019	5634	5452		4104	1470	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	2.20	-7.6	NM	1.69	2590	6.89	1065
06B	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	**0.51**	**1.84**	<1.14	<1.23	0.87	35.4	NM	0.44	2490	6.57	1120
06B	11/5/2020	5985	5803		4455	1821	**0.21**	<0.2	**0.42**	**0.82**	<1.14	<1.23	1.55	-8.4	NM	1.20	1950	6.54	17.53
06B	5/4/2021	6165	5983		4635	2001	<0.2	<0.2	**0.49**	**0.88**	<1.14	<1.23	1.22	-23.1	NM	2.68	1040	6.56	227.9
06B	11/3/2021	6348	6166		4818	2184	<0.20	<0.20	**0.62**	**1.35**	<1.14	<1.23	0.60	42.2	NM	0.49	1530	6.56	25.2
06B	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	**0.63**	**0.94**	<1.14	<1.23	2.04	36.0	NM	1.31	3570	6.51	21.2
06B	11/8/2022	6718	6536		5188	2554	<0.20	<0.20	**0.23**	**0.35**	<1.14	<1.23	0.67	20.1	NM	0.397	2830	6.37	15.94
06C	05/04/2004	-44					<1.0	<1.0	<1.0	<1.0	<0.50	**0.6**	0.40	93	5.0	20.7	360	6.7	29.0
06C	08/23/2004	67					<1.0	<1.0	**1.4**	<1.0	**5.7**	**5.9**	0.63	95	2.5	42.7	3100	6.3	1560
06C	10/19/2004	124	-58				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	2.00	206	3.0	18.1	450	6.3	464
06C	02/22/2005	250	68				<1.0	<1.0	**3.6**	<1.0	<0.50	<0.50	0.82	198	2.6	<0.5	2400	6.9	858
06C	05/16/2005	333	151				<1.0	<1.0	**1.1**	<1.0	<0.50	<0.50	1.94	98	3.0	0.2	2700	7.0	111
06C	08/22/2005	431	249				<1.0	<1.0	**1.1**	<1.0	<0.50	<0.50	1.36	194	2.8	<0.1	510	7.0	68.7
06C	11/14/2005	515	333				<1.0	<1.0	**1.1**	<1.0	<0.50	<0.50	1.07	258	2.0	<0.1	2900	7.0	48.3
06C	02/22/2006	615	433				<1.0	<1.0	<1.0	<1.0	**47.7**	<12.3	0.88	247	1.4	47.5	12300	6.6	93.4
06C	05/18/2006	700	518				<1.0	<1.0	<1.0	<1.0	<11	<12	4.88	129	2.0	30.6	15000	6.6	36.6
06C	08/16/2006	790	608				<1.0	<1.0	<1.0	<1.0	<1.1	**2.3**	0.93	231	1.6	31.8	18900	6.6	13.4
06C	11/29/2006	895	713				<0.2	<0.2	**0.3**	<0.2	<1.1	**1.4**	2.25	192	1.8	27.3	20600	6.6	46.4
06C	02/23/2007	981	799				<1.0	<1.0	<1.0	<1.0	<1.1	**1.7**	1.08	-46	4.0	25.9	18900	6.4	39.0
06C	05/24/2007	1071	889				<1.0	<1.0	<1.0	<1.0	<1.1	**2.0**	0.72	216	3.5	20.8	20800	6.5	34.0
06C	11/30/2007	1261	1079				<0.2	<0.2	**0.2**	**0.3**	<1.1	**2.8**	1.58	174	4.2	32.6	30500	6.2	40.2
06C	05/21/2008	1434	1252		-96		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	2.91	-16	2.5	21.0	23800	6.3	31.9
06C	11/25/2008	1622	1440		92		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	3.39	-66	2.6	<0.1	28700	6.8	634
06C	05/20/2009	1798	1616		268		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.66	-28	3.5	<0.8	20600	6.9	39.2
06C	11/19/2009	1981	1799		451		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	1.89	26	NM	<0.1	25600	6.2	42.8
09A	05/03/2004	-45					**150**	**230**	**970**	**37**	<0.50	<0.50	0.46	287	1.0	64.2	8.4	6.7	16.2
09A	08/23/2004	67					<3.0	**11**	**370**	**150**	**4.2**	<0.50	0.40	143	2.6	51.8	4.7	7.1	56.8
09A	10/19/2004	124	-58				<5.0	**19**	**460**	**220**	**2.7**	<0.50	0.53	219	4.0	77.4	17	6.9	19.6
09A	02/21/2005	249	67				<10	<10	**41**	**37**	**1.9**	<0.50	0.78	169	2.0	<0.5	1500	7.1	2110
09A	05/11/2005	328	146				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	1.53	141	2.0	<0.5	1700	7.2	1260
09A	08/22/2005	431	249				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	1.58	141	2.8	<0.1	460	6.8	156
09A	11/14/2005	515	333				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	1.07	238	2.0	<0.1	2600	6.9	62.8
09A	02/21/2006	614	432				<1.0	<1.0	<1.0	<1.0	<11.4	<12.3	0.94	332	2.6	0.2	5650	6.3	58.8
09A	05/15/2006	697	515				<1.0	<1.0	<1.0	<1.0	<11	<12	1.35	193	2.2	63.4	15000	6.4	44.4
09A	08/16/2006	790	608				<1.0	<1.0	<1.0	**1.2**	<1.1	**2.1**	1.55	175	2.0	56.8	16800	6.4	50.0
09A	11/27/2006	893	711				<0.2	<0.2	**0.3**	**1.1**	**1.9**	**6.3**	2.09	211	3.2	52.5	15200	6.6	51.0
09A	02/22/2007	980	798				<1.0	<1.0	<1.0	<1.0	<1.1	**7.8**	0.65	-107	4.6	0.3	15300	6.4	48.8
09A	05/22/2007	1069	887				<1.0	<1.0	<1.0	**2.8**	<1.1	**4.8**	0.75	91	2.6	0.1	16700	6.6	43.1

Table 4
SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
09A	11/29/2007	1260	1078				<1.0	<1.0	<1.0	<1.0	<1.1	**24.5**	1.01	147	3.8	45.4	27600	6.4	40.6
09A	05/19/2008	1432	1250		-98		<0.2	**0.2**	**110**	**85**	**7.8**	**35.6**	2.26	-82	3.0	29.4	17100	6.7	31.0
09A	11/24/2008	1621	1439		91		**1.9**	**4.6**	**160**	**42**	**4.0**	**2.1**	2.61	-52	3.0	<2.0	13700	6.2	5600
09A	05/18/2009	1796	1614		266		<10	<10	<10	<10	<1.1	<1.2	0.44	-88	2.5	<2.0	18100	7.1	1620
09A	11/16/2009	1978	1796		448		<5.0	<1.0	<5.0	<5.0	<1.1	<1.2	1.23	-61	2.6	<1.0	16600	6.6	403
09A	5/20/2010	2163	1981		633		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	11.09	515	2.2	<1.0	18700	7.0	72.8
09A	11/10/2010	2337	2155		807		<1.0	<1.0	<1.0	<1.0	<1.1	**2.0**	3.92	118	2.2	0.3	24400	7.0	70.0
09A	5/3/2011	2511	2329		981		<2.0	<2.0	<2.0	<2.0	<1.1	**2.0**	2.55	33	2.0	<0.2	17800	6.9	44.4
09A	11/13/2011	2705	2523		1175		<0.2	<0.2	**0.2**	<0.2	<1.1	**1.2**	2.23	-66	1.2	0.4	11800	7.0	39.4
09A	5/14/2012	2888	2706		1358		<0.2	<0.2	**0.2**	<0.2	<1.0	**13**	0.57	91	1.5	0.40	22000	6.4	30.5
09A	11/14/2012	3072	2890		1542		<2.0	<2.0	<2.0	<2.0	<1.0	**11**	0.02	-4	2.0	0.53	21000	6.6	30.9
09A	5/21/2013	3260	3078		1730		<2.0	<2.0	<2.0	<2.0	<1.0	**16**	0.32	-399	1.8	<0.30	24000	7.8	33.0
09A	11/12/2013	3435	3253		1905		<2.0	<2.0	<2.0	<2.0	<1.0	**10**	3.87	-258	1.7	0.41	18000	6.5	30.2
09A	5/7/2014	3611	3429		2081		<2.0	<2.0	<2.0	<2.0	<1.0	**29**	4.46	-322	1.4	0.50	26000	6.7	21.5
09A	11/5/2014	3793	3611		2263		<0.2	<0.2	<0.2	<0.2	<1.0	**15**	0.12	-90	2.0	<0.30	25000	6.6	24.8
09A	4/29/2015	3968	3786		2438		<0.2	<0.2	<0.2	<0.2	<1.0	**28**	0.20	-63	1.4	0.58	27000	6.4	17.8
09A	10/26/2015	4148	3966		2618	-16	<0.2	<0.2	<0.2	<0.2	<1.0	**49**	0.10	-38	1.0	0.57	21000	6.3	21.7
09A	4/19/2016	4324	4142		2794	160	<0.2	<0.2	<0.2	**0.7**	<1.0	**34**	0.15	-105	0.8	<0.30	22000	6.7	33.3
09A	11/1/2016	4520	4338		2990	356	<0.2	<0.2	<0.2	<0.2	<1.0	**120**	0.73	-89	NM	<0.30	19000	6.46	17.5
09A	5/2/2017	4702	4520		3172	538	<0.2	<0.2	<0.2	<0.2	<1.0	**430**	1.03	-118.2	NM	<0.30	20000	6.58	22.3
09A	11/8/2017	4892	4710		3362	728	<0.2	<0.2	<0.2	**0.4**	**51**	**230**	0.34	17.6	NM	0.85	21000	6.59	16.7
09A	5/1/2018	5066	4884		3536	902	<0.2	<0.2	<0.2	**2.23**	**3.54**	**575**	0.08	-37.1	NM	0.107	14900	6.59	25.22
09A	11/5/2018	5254	5072		3724	1090	<0.2	<0.2	<0.2	<0.2	<1.14	**402**	0.33	-102.4	NM	0.409	9960	6.64	22.61
09A	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	<0.2	<0.2	<1.14	**247**	0.40	-77.1	NM	<0.100	11100	6.71	33.17
09A	11/4/2019	5618	5436		4088	1454	<0.2	<0.2	<0.2	<0.2	<1.14	**123**	2.72	-18.7	NM	1.11	4120	6.57	21.06
09A	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	<0.2	<0.2	<1.14	**200**	0.26	-67.4	NM	0.19	4070	6.93	17.72
09A	11/5/2020	5985	5803		4455	1821	<0.2	<0.2	**0.47**	**1.38**	**29.5**	**216**	0.71	-85.7	NM	1.86	2860	6.41	13.39
09A	5/4/2021	6165	5983		4635	2001	<0.20	<0.20	**0.72**	**4.92**	<1.14	**52.1**	0.55	-125.3	NM	0.715	5320	6.78	27.53
09A	11/3/2021	6348	6166		4818	2184	<0.20	**0.39**	**378**	**949**	**330**	**328**	1.24	-121.9	NM	3.55	2520	6.77	10.2
09A	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	<0.20	<0.20	**34.9**	**721**	0.49	43.0	NM	0.384	3460	6.93	10.43
09A	11/7/2022	6717	6535		5187	2553	<0.20	<0.20	<0.20	<0.20	**107**	**1120**	0.31	12.4	NM	<0.100	2740	6.60	10.34
09B	05/03/2004	-45					<3.0	**4.2**	**250**	<3.0	<0.50	<0.50	0.37	269	4.0	61.4	2.7	6.8	20.7
09B	08/23/2004	67					<5.0	**16**	**530**	**100**	**0.76**	<0.50	0.34	174	1.4	73.0	23	7.4	29.7
09B	10/19/2004	124	-58				<5.0	**17**	**300**	**340**	**1.4**	<0.50	0.30	219	1.0	59.6	29	7.5	24.3
09B	02/21/2005	249	67				<10	<10	**890**	**520**	**1.7**	<0.50	0.56	160	2.8	1.0	2000	6.8	608
09B	05/11/2005	328	146				<1.0	<1.0	**12**	**24**	<0.50	<0.50	1.48	158	3.5	0.4	9600	7.0	219
09B	08/22/2005	431	249				<1.0	<1.0	<1.0	**1.7**	<0.50	<0.50	1.45	224	2.5	<0.1	400	6.7	17.6
09B	11/14/2005	515	333				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	1.24	235	1.4	<0.1	3100	6.8	51.2
09B	02/21/2006	614	432				<1.0	<1.0	<1.0	**1.3**	<11.4	<12.3	0.90	329	2.8	<0.1	8730	6.3	46.4
09B	05/15/2006	697	515				<1.0	<1.0	<1.0	<1.0	<11	<12	1.11	191	1.8	33.9	17000	6.3	45.6

Table 4
SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
09B	08/16/2006	790	608				<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.94	188	1.6	55.4	19300	6.3	250
09B	11/27/2006	893	711				<0.2	<0.2	**0.3**	**0.5**	<1.1	<1.2	1.76	190	2.8	50.2	21800	6.5	78.2
09B	02/22/2007	980	798				<1.0	<1.0	<1.0	<1.0	<1.1	**1.6**	0.67	-80	3.5	0.2	16100	6.3	64.0
09B	05/22/2007	1069	887				<1.0	<1.0	<1.0	<1.0	<1.1	**1.4**	0.76	154	3.0	<0.1	18700	6.5	35.3
09B	11/29/2007	1260	1078				<1.0	<1.0	<1.0	<1.0	<1.1	**3.8**	1.29	238	2.2	58.3	29800	6.2	44.5
09B	05/19/2008	1432	1250		-98		<0.2	<0.2	**0.2**	**0.4**	<1.1	**3.0**	2.34	-78	3.4	39.1	12900	6.4	37.3
09B	11/24/2008	1621	1439		91		<1.0	<1.0	<1.0	<1.0	<1.1	**17.6**	2.22	-47	3.0	<1.0	27000	6.7	27.0
09B	05/18/2009	1796	1614		266		<1.0	<1.0	<1.0	<1.0	<1.1	**6.9**	0.38	-38	3.5	<0.5	19700	6.9	37.1
09B	11/16/2009	1978	1796		448		<1.0	<1.0	<1.0	<1.0	<1.1	**16.1**	1.27	12	3.5	<0.1	24500	6.2	28.1
09C	05/03/2004	-45					<1.0	<1.0	**4.0**	**3.3**	**1.9**	**0.7**	0.33	229	4.0	19.1	350	6.8	28.5
09C	08/23/2004	67					<1.0	<1.0	**1.7**	<1.0	**1.1**	**2.8**	0.47	114	2.6	23.2	610	6.7	302
09C	10/19/2004	124	-58				<1.0	<1.0	<1.0	**1.5**	**1.1**	<0.50	0.60	185	3.0	12.2	620	7.0	99.6
09C	02/21/2005	249	67				<1.0	<1.0	**1.7**	<1.0	<0.50	**1.6**	0.60	154	2.0	<0.1	3500	6.6	300
09C	05/11/2005	328	146				<1.0	<1.0	**1.2**	<1.0	<0.50	<0.50	1.34	138	2.5	<0.1	2700	6.4	44.6
09C	08/22/2005	431	249				<1.0	<1.0	**7.6**	**2.2**	<0.50	<0.50	1.31	230	2.5	<0.1	360	6.7	52.0
09C	11/14/2005	515	333				<1.0	<1.0	**1.2**	<1.0	<0.50	<0.50	1.41	228	2.4	<0.1	7300	6.9	50.6
09C	02/21/2006	614	432				<1.0	<1.0	<1.0	<1.0	<11.4	<12.3	0.78	326	2.4	<0.1	10300	6.5	44.2
09C	05/15/2006	697	515				<1.0	<1.0	<1.0	<1.0	<11	<12	1.01	192	2.0	27.9	21000	7.0	42.1
09C	08/16/2006	790	608				<1.0	<1.0	<1.0	<1.0	<1.1	**1.6**	0.80	199	1.2	28.8	22900	6.5	33.0
09C	11/27/2006	893	711				<0.2	<0.2	<0.2	<0.2	<1.1	**9.1**	1.40	289	2.4	26.7	23500	6.5	44.0
09C	02/22/2007	980	798				<1.0	<1.0	<1.0	<1.0	<1.1	**3.9**	0.75	-32	3.6	0.2	17700	6.5	33.8
09C	05/22/2007	1069	887				<1.0	<1.0	<1.0	<1.0	<1.1	**5.4**	0.52	123	3.5	<0.1	20600	6.6	25.4
09C	11/29/2007	1260	1078				<1.0	<1.0	<1.0	<1.0	<1.1	**5.4**	0.81	147	3.6	27.3	30000	6.5	27.1
09C	05/19/2008	1432	1250		-98		<0.2	<0.2	<0.2	**0.2**	<1.1	**15.2**	2.11	-57	4.6	18.6	22800	6.5	22.3
09C	11/24/2008	1621	1439		91		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	2.92	-44	1.8	<2.0	17700	6.6	334
09C	05/18/2009	1796	1614		266		<1.0	<1.0	<1.0	<1.0	<1.1	**4.3**	0.45	-44	3.5	<0.5	21400	7.0	24.0
09C	11/16/2009	1978	1796		448		<3.0	<3.0	<3.0	<3.0	<1.1	**1.9**	1.27	-7	3.0	<0.1	22400	6.4	20.7
10A	05/03/2004	-45					**29**	**27**	**80**	**6.4**	<0.50	<0.50	0.60	108	2.0	37.8	2.8	6.8	20.0
10A	08/23/2004	67					**14**	**12**	**170**	**4.0**	<0.50	<0.50	0.49	181	3.5	38.9	1.1	7.0	59.6
10A	10/19/2004	124	-58				**15**	**15**	**100**	**23**	<0.50	<0.50	0.66	224	4.0	37.8	2.7	7.0	24.0
10A	02/21/2005	249	67				**4.7**	**4.8**	**24**	**6.8**	<0.50	**0.54**	0.53	166	3.6	24.3	430	7.0	22.4
10A	05/11/2005	328	146				**4.2**	**5.4**	**26**	**7.2**	<0.50	<0.50	0.95	47	3.0	27.9	540	7.2	25.9
10A	08/22/2005	431	249				**2.7**	**6.3**	**48**	**76**	<0.50	<0.50	0.73	177	2.0	48.8	240	7.0	31.4
10A	11/14/2005	515	333				**3.3**	**6.7**	**47**	**73**	<0.50	<0.50	0.91	178	2.0	50.6	370	7.1	34.1
10A	02/21/2006	614	432				**3.7**	**9.6**	**42**	**150**	<11.4	<12.3	0.54	320	2.0	53.9	1130	6.8	45.8
10A	05/15/2006	697	515				**1.8**	**3.7**	**63**	**19**	<11	<12	0.67	190	1.8	57.4	3100	6.8	49.2
10A	08/16/2006	790	608				**1.6**	**1.6**	**38**	**20**	<1.1	<1.2	1.50	201	1.4	57.5	1620	6.7	50.8
10A	11/27/2006	893	711				<0.2	<0.2	**7.4**	**9.2**	**2.6**	**2.6**	2.67	201	3.0	57.9	1650	6.9	56.0
10A	02/22/2007	980	798				**1.2**	<1.0	**32**	**35**	<1.1	<1.2	0.57	-176	4.6	20.4	1370	6.8	56.4

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SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
10A	05/22/2007	1069	887				**1.1**	<1.0	**28**	**44**	<1.1	**1.4**	0.88	73	3.0	10.2	2590	6.9	47.3
10A	11/29/2007	1260	1078				**1.2**	<1.0	**22**	**78**	**4.4**	**3.7**	0.80	106	4.2	47.9	4810	6.9	47.8
10A	05/19/2008	1432	1250		-98		<1.0	<1.0	**22**	**180**	**7.9**	**4.4**	2.19	-177	4.0	32.5	4870	7.0	33.3
10A	11/24/2008	1621	1439		91		<1.0	<1.0	**1.6**	**5.0**	<1.1	<1.2	2.29	-87	3.4	1.3	16900	7.1	1200
10A	05/18/2009	1796	1614		266		<2.0	<2.0	<2.0	<2.0	<1.1	<1.2	0.66	-80	3.3	<1.0	17900	6.9	168
10A	11/16/2009	1978	1796		448		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	3.14	-40	4.2	<1.0	18200	6.3	69.2
10A	5/20/2010	2163	1981		633		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	16.23	341	3.0	<1.0	17600	6.8	60.4
10A	11/10/2010	2337	2155		807		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	4.09	67	2.4	0.5	22800	6.9	56.8
10A	5/3/2011	2511	2329		981		<2.0	<2.0	<2.0	<2.0	<1.1	<1.2	2.47	-21	2.5	<0.2	20700	6.9	41.6
10A	11/13/2011	2705	2523		1175		<0.2	<0.2	**0.2**	**0.4**	<1.1	<1.2	2.45	-38	2.0	0.3	15400	7.1	33.8
10A	5/14/2012	2888	2706		1358		<0.2	<0.2	**0.2**	**0.4**	<1.0	<1.0	0.57	88	2.5	0.32	20000	6.4	38.0
10A	11/14/2012	3072	2890		1542		<0.2	<0.2	**0.3**	**0.4**	<1.0	<1.0	0.03	-16	2.0	<0.30	19000	6.6	30.6
10A	5/21/2013	3260	3078		1730		<0.2	<0.2	**0.2**	**0.3**	<1.0	<3.0	0.35	-340	1.8	<0.30	26000	7.5	29.5
10A	11/12/2013	3435	3253		1905		<0.2	<0.2	**0.2**	**0.4**	<1.0	**2.5**	3.53	-242	1.4	0.38	16000	6.5	29.1
10A	5/7/2014	3611	3429		2081		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.06	-305	2.1	<0.30	26000	6.7	27.9
10A	11/5/2014	3793	3611		2263		<0.2	<0.2	**0.2**	**0.3**	<1.0	**5.5**	0.17	-134	2.0	<0.30	25000	6.5	26.1
14A	05/04/2004	-44					<1.0	<1.0	**140**	**110**	<0.50	<0.50	0.53	-8	7.5	38.9	590	6.8	20.7
14A	08/23/2004	67					<1.0	**2.9**	**560**	**180**	**0.89**	**0.67**	0.54	162	3.2	30.1	810	6.8	22.6
14A	10/19/2004	124	-58				<5.0	**39**	**1200**	**650**	<0.50	<0.50	0.64	69	3.0	43.3	350	6.9	20.6
14A	02/21/2005	249	67	-24			<5.0	<5.0	**300**	**1000**	**13**	**2.7**	0.41	101	1.8	3.8	1700	6.9	44.0
14A	05/16/2005	333	151	60			<10	<10	<10	<10	<0.50	<0.50	5.90	45	4.0	<2.0	590	6.4	8620
14A	08/22/2005	431	249	158			<10	<10	<10	<10	<0.50	<0.50	1.62	234	3.0	<2.0	220	6.8	5380
14A	11/15/2005	516	334	243			<3.0	<3.0	**6.0**	<3.0	<0.50	<0.50	1.26	257	2.0	<0.1	2500	6.4	602
14A	02/21/2006	614	432	341			<1.0	<1.0	<1.0	<1.0	<11.4	<12.3	1.36	335	2.0	<0.1	5400	7.4	180
14A	05/17/2006	699	517	426			<2.0	<2.0	**2.1**	<2.0	<11	<12	1.78	76	2.8	12.0	9400	6.4	67.1
14A	08/16/2006	790	608	517			<1.0	<1.0	**3.0**	<1.0	<1.1	<1.2	1.16	240	1.2	16.5	6320	6.5	66.0
14A	11/29/2006	895	713	622			<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	1.57	248	2.8	11.8	11100	6.3	72.0
14A	02/22/2007	980	798	707			<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.89	-56	7.0	0.2	7670	6.2	34.9
14A	05/23/2007	1070	888	797			<1.0	<1.0	**1.5**	<1.0	<1.1	<1.2	1.11	165	3.0	8.6	10100	6.3	27.5
14A	12/03/2007	1264	1082	991			<1.0	<1.0	**1.6**	<1.0	<1.1	<1.2	2.29	-86	3.2	15.9	14500	6.4	55.6
14A	05/20/2008	1433	1251	1160	-97		<1.0	<1.0	**1.2**	<1.0	<1.1	<1.2	3.45	-88	3.6	<0.1	12100	6.3	26.3
14A	11/24/2008	1621	1439	1348	91		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	2.79	-70	3.0	194	14500	6.1	8.68
14A	05/20/2009	1798	1616	1525	268		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.41	-95	3.5	20.0	14400	6.3	9.83
14A	11/17/2009	1979	1797	1706	449		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.81	-18	3.2	165	15800	5.7	6.22
14A	5/24/2010	2167	1985	1894	637		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	4.29	311	2.8	5.1	14600	6.4	8.07
14A	11/10/2010	2337	2155	2064	807		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	2.47	171	2.6	38.6	14300	6.8	6.88
14A	5/5/2011	2513	2331	2240	983		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	2.96	83	1.8	8.4	15100	7.1	3.28
14A	11/13/2011	2705	2523	2432	1175		<0.2	<0.2	**0.6**	<0.2	<1.1	<1.2	2.04	-52	1.5	<0.1	7510	6.9	8.05
14A	5/14/2012	2888	2706	2615	1358		<0.2	<0.2	**0.3**	**0.2**	<1.0	**8.7**	0.13	62	2.6	3.4	16000	6.4	5.9
14A	11/14/2012	3072	2890	2799	1542		<0.2	<0.2	**0.6**	<0.2	<1.0	**5.0**	0.03	31	1.5	79.0	16000	6.4	6.5

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Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
14A	5/21/2013	3260	3078	2987	1730		<0.5	<0.5	<0.5	<0.5	<1.0	**4.8**	0.24	-428	2.4	2.3	18000	7.4	6.5
14A	11/12/2013	3435	3253	3162	1905		<0.2	<0.2	**0.5**	<0.2	<1.0	**6.3**	4.46	-286	1.3	0.52	14000	6.4	8.0
14A	5/7/2014	3611	3429	3338	2081		<0.2	<0.2	**0.3**	**0.3**	<1.0	**4.6**	4.39	-427	1.6	19.9	15000	6.8	6.5
14A	11/5/2014	3793	3611	3520	2263		<0.2	<0.2	**0.4**	**0.2**	<1.0	**10**	0.04	-48	2.0	23.6	15000	6.5	6.8
15A	05/03/2004	-45					<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
15A	10/26/2004	131	-51				<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
15A	05/16/2005	333	151				<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
15A	11/15/2005	516	334				<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
15A	05/17/2006	699	517				<5.0	<5.0	<5.0	<5.0	NA	NA	0.79	131	NA	NA	NA	6.7	NA
15A	11/29/2006	895	713				<3.0	<3.0	<3.0	<3.0	NA	NA	1.26	513	NA	NA	NA	6.6	NA
15A	05/23/2007	1070	888				<1.0	<1.0	**1.4**	**2.6**	NA	NA	1.19	144	NA	NA	NA	6.7	NA
15A	12/03/2007	1264	1082				<1.0	<1.0	<1.0	**1.3**	NA	NA	1.31	-105	NA	NA	NA	6.6	NA
15A	05/20/2008	1433	1251		-97		<3.0	<3.0	<3.0	<3.0	NA	NA	2.57	-135	NA	NA	NA	6.7	NA
15A	11/24/2008	1621	1439		91		<1.0	<1.0	<1.0	<2.0	NA	NA	2.07	-61	NA	NA	NA	6.8	NA
15A	05/19/2009	1797	1615		267		<3.0	<3.0	<3.0	<3.0	NA	NA	0.35	-33	NA	NA	NA	6.9	NA
15A	11/18/2009	1980	1798		450		<1.0	<1.0	<1.0	**1.4**	NA	NA	0.72	-0.1	NA	NA	NA	6.3	NA
15A	5/20/2010	2163	1981		633		<1.0	<1.0	<1.0	**1.6**	NA	NA	1.10	606	NA	NA	NA	6.8	NA
15A	11/10/2010	2337	2155		807		<1.0	<1.0	<1.0	**1.4**	NA	NA	2.42	118	NA	NA	NA	7.1	NA
15A	5/5/2011	2513	2331		983		<10	<10	<10	<10	NA	NA	4.83	-19	NA	NA	NA	7.2	NA
15A	11/13/2011	2705	2523		1175		<0.2	<0.2	**0.3**	**1.0**	NA	NA	4.01	-41	NA	NA	NA	7.3	NA
15A	5/14/2012	2888	2706		1358		<1.0	<1.0	<1.0	**1.2**	NA	NA	0.64	56	NA	NA	NA	6.7	NA
15A	11/13/2012	3071	2889		1541		<0.2	<0.2	**0.4**	**0.8**	NA	NA	0.03	23	NA	NA	NA	6.8	NA
15A	5/21/2013	3260	3078		1730		<0.5	<0.5	**0.6**	**1.1**	NA	NA	0.20	-394	NA	NA	NA	7.4	NA
15A	11/12/2013	3435	3253		1905		<0.2	<0.2	**0.5**	**0.8**	NA	NA	3.38	-267	NA	NA	NA	6.7	NA
15A	5/7/2014	3611	3429		2081		<0.2	<0.2	**0.6**	**1.0**	NA	NA	3.86	-351	NA	NA	NA	6.9	NA
15A	11/5/2014	3793	3611		2263		<0.2	<0.2	**0.4**	**0.5**	NA	NA	0.09	-126	NA	NA	NA	6.8	NA
19A	05/02/2004	-46	-228				<1.0	<1.0	<1.0	<1.0	NA	NA	0.33	-3	NA	NA	NA	6.5	NA
19A	02/21/2005	249	67				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.65	180	NA	47.4	17	6.7	15.5
19A	05/12/2005	329	147				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.63	169	3.0	31.3	9.1	6.8	14.2
19A	08/22/2005	431	249				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.74	106	3.0	68.3	16	6.6	10.5
19A	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.56	201	2.6	95.9	35	6.8	9.30
19A	02/22/2006	615	433				<1.0	<1.0	<1.0	<1.0	<11.4	<12.3	0.77	65	3.0	124.0	111	6.6	31.3
19A	05/17/2006	699	517				<1.0	<1.0	<1.0	<1.0	<11	<12	1.14	56	2.0	73.4	230	6.4	15.7
19A	08/15/2006	789	607				<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.60	229	2.0	47.3	202	6.4	11.5
19A	11/27/2006	893	711				<0.2	**0.2**	**0.3**	<0.2	<1.1	<1.2	0.88	264	2.0	41.9	186	6.4	13.6
19A	02/22/2007	980	798				<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.42	-23	3.0	20.7	248	6.2	19.8
19A	05/22/2007	1069	887				<1.0	<1.0	<1.0	<1.0	<1.1	**5.2**	0.34	277	3.5	30.8	179	6.4	15.4
19A	11/29/2007	1260	1078				<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.67	243	2.2	37.2	235	6.2	14.3
19A	05/20/2008	1433	1251		-97		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	3.23	-79	3.8	20.9	134	6.4	11.5

Table 4
SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
19A	11/23/2008	1620	1438		90		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	1.62	-61	2.0	46.1	97.8	6.4	10.6
19A	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.30	-28	3.2	28.6	127	6.8	12.8
19A	11/18/2009	1980	1798		450		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	1.58	-2	3.4	22.1	122	6.5	10.7
22A	03/21/2005	277	95	4			<1.0	<1.0	**3.5**	**2.0**	<0.50	<0.50	1.86	53	2.8	12.8	280	7.0	11.1
22A	05/12/2005	329	147	56			<1.0	<1.0	**2.3**	**2.9**	<0.50	<0.50	0.83	155	2.6	1.3	300	7.1	31.3
22A	08/22/2005	431	249	158			<1.0	<1.0	**2.3**	**3.2**	<0.50	<0.50	0.70	170	2.6	3.0	230	6.9	26.5
22A	11/16/2005	517	335	244			<1.0	<1.0	**1.4**	**2.2**	<0.50	<0.50	1.67	321	2.4	1.3	1300	6.3	29.9
22A	02/22/2006	615	433	342			<1.0	<1.0	**1.4**	**3.3**	<11.4	<12.3	0.69	97	2.0	59.0	1940	6.8	32.0
22A	05/17/2006	699	517	426			<1.0	<1.0	**2.4**	**1.7**	<11	<12	0.67	102	2.6	32.7	3600	6.8	17.6
22A	08/15/2006	789	607	516			<1.0	<1.0	**1.8**	**2.4**	<1.1	<1.2	0.65	239	2.0	54.7	5700	6.7	24.0
22A	11/30/2006	896	714	623			<0.2	**0.3**	**2.2**	**2.4**	<1.1	<1.2	2.15	286	2.6	40.0	4020	6.6	25.2
22A	02/22/2007	980	798	707			<1.0	<1.0	**2.5**	**2.3**	<1.1	<1.2	0.53	-76	5.0	<0.1	3000	6.6	22.4
22A	05/23/2007	1070	888	797			<1.0	<1.0	**2.5**	**2.7**	<1.1	<1.2	0.30	51	3.0	27.3	3510	6.8	18.2
22A	12/03/2007	1264	1082	991			<1.0	<1.0	**2.0**	**1.3**	<1.1	<1.2	0.61	41	2.6	12.3	2030	6.6	16.0
22A	05/20/2008	1433	1251	1160	-97		<1.0	<1.0	**2.6**	**1.9**	<1.1	<1.2	2.83	-103	4.0	20.2	1540	6.7	13.8
22A	11/23/2008	1620	1438	1347	90		<1.0	<1.0	**2.2**	**3.1**	<1.1	<1.2	1.13	-70	1.8	2.6	3100	6.8	19.2
22A	05/19/2009	1797	1615	1524	267		<1.0	<1.0	**2.5**	**2.5**	<1.1	<1.2	0.26	-43	3.2	3.4	3490	7.0	21.0
22A	11/18/2009	1980	1798	1707	450		<1.0	<1.0	**2.1**	**1.8**	<1.1	<1.2	0.43	-3.3	3.0	2.1	2060	6.4	13.8
22A	5/24/2010	2167	1985	1894	637		<1.0	<1.0	**1.7**	**1.7**	<1.1	<1.2	6.58	204	2.4	0.6	2370	7.0	15.1
22A	11/11/2010	2338	2156	2065	808		<1.0	<1.0	**1.2**	**2.7**	<1.1	<1.2	3.27	113	2.2	0.5	4650	7.0	21.8
22A	5/4/2011	2512	2330	2239	982		<1.0	<1.0	**1.1**	**2.2**	<1.1	<1.2	1.96	4	2.0	0.6	6350	7.0	22.4
22A	11/13/2011	2705	2523	2432	1175		<0.2	<0.2	**0.9**	**1.7**	<1.1	<1.2	2.89	-38	1.2	0.4	2510	7.3	17.6
22A	5/14/2012	2888	2706	2615	1358		<0.2	<0.2	**0.6**	**2.0**	<1.0	**3.3**	0.03	45	2.2	<0.30	5100	6.8	25.4
22A	11/14/2012	3072	2890	2799	1542		<0.2	<0.2	**0.5**	**1.8**	<1.0	**1.7**	0.03	1	1.8	<0.30	4400	6.9	22.7
22A	5/20/2013	3259	3077	2986	1729		<0.2	<0.2	**0.4**	**2.0**	<1.0	**1.6**	0.24	-404	1.0	<0.30	6100	7.7	24.6
22A	11/12/2013	3435	3253	3162	1905		<0.2	<0.2	**0.5**	**1.7**	<1.0	**1.1**	3.69	-289	1.4	1.8	3500	6.7	19.8
22A	5/7/2014	3611	3429	3338	2081		<0.2	<0.2	**0.5**	**1.6**	<1.0	<1.0	4.8	-368	1.3	0.66	4200	6.8	23.6
22A	11/5/2014	3793	3611	3520	2263		<0.2	<0.2	**0.4**	**1.5**	<1.0	**1.5**	0.13	-131	1.5	0.39	4800	6.8	25.8
22A	4/29/2015	3968	3786	3695	2438		<0.2	<0.2	**0.6**	**1.5**	<1.0	<1.0	0.09	-87	1.0	2.0	4300	6.5	14.8
22A	10/27/2015	4149	3967	3876	2619	-15	<0.2	<0.2	**0.5**	**1.5**	<1.0	<1.0	0.07	-64	2.0	2.6	3500	6.6	16.7
22A	4/19/2016	4324	4142	4051	2794	160	<0.2	<0.2	**0.5**	<0.2	<100	<100	0.14	-163	1.0	1.9	15000	7.0	2980
22A	11/2/2016	4521	4339	4248	2991	357	<0.2	<0.2	**0.5**	<0.2	<100	<100	0.37	-252.6	NM	<0.30	18000	7.34	542
22A	5/2/2017	4702	4520	4429	3172	538	<0.2	<0.2	**0.4**	**0.3**	<1.0	<1.0	0.41	-206.8	NM	<0.30	18000	7.24	300
22A	11/8/2017	4892	4710	4619	3362	728	<0.2	<0.2	**0.6**	**0.3**	<1.0	**1.8**	0.32	-17.5	NM	<15.0	17000	7.10	277
22A	5/1/2018	5066	4884	4793	3536	902	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	0.08	-94.7	NM	<0.5	18800	7.12	297.2
22A	11/5/2018	5254	5072	4981	3724	1090	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	0.89	-161.9	NM	<0.10	13100	6.98	191.6
22A	5/1/2019	5431	5249	5158	3901	1267	<0.2	<0.2	**0.52**	<0.2	<1.14	<1.23	0.22	-138.2	NM	0.51	14400	7.01	179.4
22A	11/4/2019	5618	5436	5345	4088	1454	<0.2	<0.2	**0.49**	**0.21**	<1.14	<1.23	2.94	-80.6	NM	0.344	10000	6.92	172.8
22A	5/4/2020	5800	5618	5527	4270	1636	<0.2	<0.2	**0.58**	**0.30**	<1.14	<1.23	0.85	-102.8	NM	0.140	10800	6.87	112.5
22A	11/5/2020	5985	5803	5712	4455	1821	<0.2	<0.2	**0.43**	<0.2	<1.14	<1.23	0.74	-125.8	NM	0.132	8030	6.73	61.55

Table 4
SWMU-20 Cleanup Action Summary—Source Zone
Boeing Developmental Center
Tukwila, Washington

		Elapsed Time (days) (a)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters	
Well	Date	Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)
		Proposed Groundwater Cleanup Levels (d):					5.3	1.4	134	2.4	---	---	---	---	---	---	---	---	---
22A	5/4/2021	6165	5983	5892	4635	2001	<0.20	<0.20	**0.40**	<0.20	<1.14	<1.23	0.65	-145.7	NM	<0.100	5230	6.73	77.03
22A	11/3/2021	6348	6166	6075	4818	2184	<0.20	<0.20	<1.00	<0.70	<1.14	<1.23	0.44	22.2	NM	<0.100	6600	6.73	25.3
22A	5/9/2022	6535	6353	6262	5005	2371	<0.20	<0.20	**0.47**	**0.45**	<1.14	<1.23	7.00	-133.7	NM	0.732	5410	6.58	22.84
22A	11/7/2022	6717	6535	6444	5187	2553	<0.20	<0.20	**0.47**	**0.36**	<1.14	**1.29**	0.41	-2.6	NM	0.494	5330	6.45	18.16
23A	03/21/2005	277	95	4			<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.63	81	2.0	0.4	410	7.0	33.0
23A	05/12/2005	329	147	56			<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.58	158	2.0	<0.1	260	7.2	39.9
23A	08/22/2005	431	249	158			<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.75	130	3.4	1.5	98	7.0	21.0
23A	11/16/2005	517	335	244			<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	0.49	291	2.6	4.1	140	7.2	30.8
23A	02/22/2006	615	433	342			<1.0	<1.0	<1.0	<1.0	<11.4	<12.3	0.60	127	2.2	91.8	1520	6.4	34.5
23A	05/17/2006	699	517	426			<1.0	<1.0	<1.0	<1.0	<11	<12	0.60	120	3.0	38.8	1700	6.7	30.0
23A	08/15/2006	789	607	516			<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.77	256	2.2	63.9	3080	6.7	32.6
23A	11/30/2006	896	714	623			<0.2	<0.2	<0.2	<0.2	<1.1	<1.2	1.96	287	2.5	40.7	1930	6.2	45.2
23A	02/22/2007	980	798	707			<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.40	-58	2.0	2.9	1360	6.5	34.6
23A	05/23/2007	1070	888	797			<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.41	193	3.3	52.7	1850	6.4	38.7
23A	11/30/2007	1261	1079	988			<0.2	<0.2	**0.3**	<0.2	<1.1	<1.2	0.55	159	2.2	81.1	4430	6.6	38.6
23A	05/21/2008	1434	1252	1161	-96		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	3.12	-28	2.2	31.7	1570	6.1	29.6
23A	11/25/2008	1622	1440	1349	92		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	4.22	-68	1.8	<0.1	3270	6.8	39.0
23A	05/19/2009	1797	1615	1524	267		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.31	-3	3.2	0.1	2370	6.5	39.1
23A	11/18/2009	1980	1798	1707	450		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.41	1	2.4	1.6	1970	6.5	30.9

Abbreviations and Acronyms:

µg/L = micrograms per liter
cDCE = cis-1,2-dichloroethene
DO = dissolved oxygen
mg/L = milligrams per liter
mV = millivolts
NA = not analyzed
NM = not measured
ORP = oxidation reduction potential
PCE = tetrachloroethene
TCE = trichloroethene
TOC = total organic carbon
VC = vinyl chloride

Notes:

(a) Injections occurred on:
6/17/04 (6A, B, C; 9A, B, C)
12/16-17/04 (6A, 6B;9A,9B)
3/17/05 (14A)
8/25-28/08 (6A, 9A, 10A)
10/27-11/11/15 (6A, 6B, 10C, 15C, 16A, 16C, 17A, 20C, 22A
(b) Conducted at Well MW-14A only.
(c) MW-06A installed June 2004.
(d) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13)

Box = exceedance of proposed cleanup level
Bold = detected compund

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					5.3	1.4	134	2.4
MW-8C	5/3/2004	-45					<1.0	<1.0	<1.0	**2.8**
MW-8C	10/25/2004	130	-52				<1.0	<1.0	<1.0	**3.5**
MW-8C	5/12/2005	329	147				<1.0	<1.0	<1.0	<1.0
MW-8C	11/14/2005	515	333				<1.0	<1.0	<1.0	<1.0
MW-8C	5/15/2006	697	515				<10	<10	<10	<10
MW-8C	11/27/2006	893	711				<5.0	<5.0	<5.0	<5.0
MW-8C	5/21/2007	1068	886				<3.0	<3.0	<3.0	<3.0
MW-8C	11/29/2007	1260	1078				<5.0	<5.0	<5.0	<5.0
MW-8C	5/19/2008	1432	1250		-98		<5.0	<5.0	<5.0	<5.0
MW-8C	11/23/2008	1620	1438		90		<5.0	<5.0	<5.0	<5.0
MW-8C	05/18/2009	1796	1614		266		<1.0	<1.0	<1.0	<1.0
MW-8C	11/16/2009	1978	1796		448		<3.0	<3.0	<3.0	<3.0
MW-9D	5/3/2004	-45					<1.0	<1.0	<1.0	<1.0
MW-9D	10/19/2004	124	-58				<1.0	<1.0	<1.0	<1.0
MW-9D	5/11/2005	328	146				<1.0	<1.0	<1.0	<1.0
MW-9D	11/14/2005	515	333				<1.0	<1.0	<1.0	<1.0
MW-9D	5/15/2006	697	515				<1.0	<1.0	<1.0	<1.0
MW-9D	11/27/2006	893	711				<1.0	<1.0	<1.0	<1.0
MW-9D	5/22/2007	1069	887				<1.0	<1.0	<1.0	<1.0
MW-9D	11/29/2007	1260	1078				<1.0	<1.0	<1.0	<1.0
MW-9D	5/19/2008	1432	1250		-98		<0.2	<0.2	<0.2	<0.2
MW-9D	11/24/2008	1621	1439		91		<1.0	<1.0	<1.0	<1.0
MW-9D	05/18/2009	1796	1614		266		<1.0	<1.0	<1.0	<1.0
MW-9D	11/16/2009	1978	1796		448		<1.0	<1.0	<1.0	<1.0
MW-10C	5/3/2004	-45					<1.0	<1.0	**4.3**	**4.0**
MW-10C	10/19/2004	124	-58				<1.0	<1.0	**6.4**	**11**
MW-10C	5/11/2005	328	146				<1.0	<1.0	**4.0**	**1.9**
MW-10C	11/14/2005	515	333				<1.0	<1.0	<1.0	**1.0**
MW-10C	5/15/2006	697	515				<1.0	<1.0	**1.5**	**2.2**
MW-10C	11/27/2006	893	711				<0.2	<0.2	**1.9**	**2.6**
MW-10C	5/22/2007	1069	887				<1.0	<1.0	**6.7**	**5.8**
MW-10C	11/29/2007	1260	1078				<1.0	<1.0	**7.2**	**5.6**
MW-10C	5/19/2008	1432	1250		-98		<0.2	<0.2	**15**	**6.9**
MW-10C	11/24/2008	1621	1439		91		<1.0	<1.0	**8.5**	**7.5**
MW-10C	05/18/2009	1796	1614		266		<1.0	<1.0	<1.0	<1.0
MW-10C	11/16/2009	1978	1796		448		<1.0	<1.0	<1.0	<1.0
MW-10C	5/20/2010	2163	1981		633		<1.0	<1.0	<1.0	<1.0
MW-10C	11/10/2010	2337	2155		807		<1.0	<1.0	**3.5**	**4.4**
MW-10C	5/3/2011	2511	2329		981		<1.0	<1.0	**5.8**	**4.7**
MW-10C	11/13/2011	2705	2523		1175		<0.2	<0.2	**3.7**	**4.3**
MW-10C	5/14/2012	2888	2706		1358		<0.2	<0.2	**5.4**	**4.0**
MW-10C	11/14/2012	3072	2890		1542		<0.2	<0.2	**6.1**	**4.4**
MW-10C	5/21/2013	3260	3078		1730		<0.2	<0.2	**6.0**	**4.5**
MW-10C	11/12/2013	3435	3253		1905		<0.2	<0.2	**3.5**	**3.7**
MW-10C	5/7/2014	3611	3429		2081		<0.2	<0.2	**5.4**	**2.9**
MW-10C	11/5/2014	3793	3611		2263		<0.2	<0.2	**2.6**	**2.5**
MW-10C	4/28/2015	3967	3785		2437		<0.2	<0.2	**2.2**	**1.7**
MW-10C	10/26/2015	4148	3966		2618	-16	<0.2	<0.2	**1.0**	**1.1**
MW-10C	4/19/2016	4324	4142		2794	160	<0.2	<0.2	**0.5**	<0.2
MW-10C	11/1/2016	4520	4338		2990	356	<0.2	<0.2	**0.5**	<0.2
MW-10C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	**0.4**	**0.2**
MW-10C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	**0.5**	**0.2**
MW-10C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	**0.55**	**0.39**
MW-10C	11/5/2018	5254	5072		3724	1090	<0.2	<0.2	**0.39**	**0.22**
MW-10C	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	**0.53**	**0.46**
MW-10C	11/7/2019	5621	5439		4091	1457	<0.2	<0.2	**0.50**	**0.68**
MW-10C	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	**0.40**	**0.51**

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					5.3	1.4	134	2.4
MW-10C	11/4/2020	5984	5802		4454	1820	<0.2	<0.2	**0.34**	**0.43**
MW-10C	5/4/2021	6165	5983		4635	2001	<0.2	<0.2	**0.26**	**0.30**
MW-10C	11/3/2021	6348	6166		4818	2184	<0.20	<0.20	<0.20	<0.20
MW-10C	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	<0.20	**0.51**
MW-10C	11/7/2022	6717	6535		5187	2553	<0.20	<0.20	<0.20	<0.20
MW-11A	5/2/2004	-46					<1.0	**2.1**	**21**	<1.0
MW-11A	10/25/2004	130	-52				<1.0	**2.0**	**20**	<1.0
MW-11A	5/12/2005	329	147				<1.0	**2.0**	**20**	<1.0
MW-11A	11/15/2005	516	334				<1.0	**2.0**	**22**	<1.0
MW-11A	5/16/2006	698	516				<1.0	**1.1**	**20**	<1.0
MW-11A	11/26/2006	892	710				<1.0	**1.5**	**24**	<1.0
MW-11A	5/22/2007	1069	887				<1.0	**1.5**	**26**	<1.0
MW-11A	11/27/2007	1258	1076				<1.0	**1.1**	**27**	<1.0
MW-11A	5/19/2008	1432	1250		-98		<0.2	**1.2**	**26**	**0.2**
MW-11A	11/23/2008	1620	1438		90		<1.0	**1.2**	**33**	<1.0
MW-11A	05/18/2009	1796	1614		266		<1.0	<1.0	**26**	<1.0
MW-11A	11/17/2009	1979	1797		449		<1.0	**1.0**	**30**	<1.0
MW-11A	5/19/2010	2162	1980		632		<1.0	**1.1**	**26**	<1.0
MW-11A	11/8/2010	2335	2153		805		<1.0	<1.0	**22**	<1.0
MW-11A	5/3/2011	2511	2329		981		<1.0	<1.0	**22**	<1.0
MW-11A	11/13/2011	2705	2523		1175		<0.2	**0.5**	**23**	**0.4**
MW-11A	5/14/2012	2888	2706		1358		<0.2	**0.7**	**24**	**0.4**
MW-11A	11/14/2012	3072	2890		1542		<2.0	<2.0	**25**	<2.0
MW-11A	5/21/2013	3260	3078		1730		<2.0	<2.0	**22**	<2.0
MW-11A	11/12/2013	3435	3253		1905		<2.0	<2.0	**24**	<2.0
MW-11A	5/7/2014	3611	3429		2081		<2.0	<2.0	**19**	<2.0
MW-11A	11/4/2014	3792	3610		2262		<0.2	**0.4**	**24**	**0.4**
MW-11A	4/28/2015	3967	3785		2437		<0.2	**0.5**	**21**	**0.3**
MW-11A	10/26/2015	4148	3966		2618	-16	**0.2**	**0.2**	**19**	**0.4**
MW-11A	4/19/2016	4324	4142		2794	160	<0.2	**0.3**	**20**	**0.4**
MW-11A	11/1/2016	4520	4338		2990	356	<0.2	<0.2	**15**	**0.5**
MW-11A	5/2/2017	4702	4520		3172	538	<0.2	**0.4**	**18**	**0.6**
MW-11A	11/8/2017	4892	4710		3362	728	<0.2	**0.2**	**21**	**0.5**
MW-11A	5/1/2018	5066	4884		3536	902	**0.26**	**0.26**	**11.8**	**0.35**
MW-11A	11/5/2018	5254	5072		3724	1090	<0.2	<0.2	**13.9**	**0.40**
MW-11A	5/1/2019	5431	5249		3901	1267	<0.2	**0.21**	**10.8**	**0.29**
MW-11A	11/4/2019	5618	5436		4088	1454	<0.2	<0.2	**12.5**	**0.42**
MW-11A	5/4/2020	5800	5618		4270	1636	**0.25**	**0.21**	**10.4**	**0.46**
MW-11A	11/4/2020	5984	5802		4454	1820	<0.2	<0.2	**10.8**	**0.44**
MW-11A	5/4/2021	6165	5983		4635	2001	**0.30**	**0.25**	**7.67**	**0.24**
MW-11A	11/3/2021	6348	6166		4818	2184	**0.23**	<0.20	**8.21**	**0.42**
MW-11A	5/9/2022	6535	6353		5005	2371	**0.27**	**0.26**	**3.75**	<0.20
MW-11A	11/7/2022	6717	6535		5187	2553	**0.28**	**0.22**	**9.91**	**0.21**
MW-12A	5/2/2004	-46					<1.0	<1.0	**1.8**	<1.0
MW-12A	10/25/2004	130	-52				<1.0	<1.0	**4.4**	<1.0
MW-12A	5/12/2005	329	147				<1.0	<1.0	**2.0**	<1.0
MW-12A	11/15/2005	516	334				<1.0	<1.0	**3.8**	<1.0
MW-12A	5/16/2006	698	516				<1.0	<1.0	**1.5**	<1.0
MW-12A	11/26/2006	892	710				<0.2	**0.7**	**4.4**	<0.2
MW-12A	5/22/2007	1069	887				<1.0	<1.0	**2.4**	<1.0
MW-12A	11/27/2007	1258	1076				<1.0	<1.0	**3.2**	<1.0
MW-12A	5/19/2008	1432	1250		-98		<0.2	**0.6**	**3.2**	<0.2
MW-12A	11/23/2008	1620	1438		90		<1.0	<1.0	**4.7**	<1.0
MW-12A	05/18/2009	1796	1614		266		<1.0	<1.0	**1.4**	<1.0
MW-12A	11/17/2009	1979	1797		449		<1.0	<1.0	**4.7**	<1.0
MW-12A	5/19/2010	2162	1980		632		<1.0	<1.0	<1.0	<1.0
MW-12A	11/8/2010	2335	2153		805		<1.0	<1.0	**4.3**	<1.0

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					**5.3**	**1.4**	**134**	**2.4**
MW-12A	5/3/2011	2511	2329		981		<1.0	<1.0	<1.0	<1.0
MW-12A	11/13/2011	2705	2523		1175		<0.2	**0.6**	**3.1**	<0.2
MW-12A	5/14/2012	2888	2706		1358		**0.2**	<0.2	<0.2	<0.2
MW-12A	11/14/2012	3072	2890		1542		<0.2	**0.4**	**2.1**	<0.2
MW-12A	5/21/2013	3260	3078		1730		<0.2	<0.2	**0.5**	<0.2
MW-12A	11/12/2013	3435	3253		1905		<0.2	**0.5**	**2.2**	<0.2
MW-12A	5/7/2014	3611	3429		2081		**0.3**	<0.2	<0.2	<0.2
MW-12A	11/4/2014	3792	3610		2262		**0.3**	<0.2	**0.3**	<0.2
MW-13A	5/2/2004	-46					**5.1**	**4.6**	<1.0	<1.0
MW-13A	10/25/2004	130	-52				**4.3**	**4.0**	<1.0	<1.0
MW-13A	5/12/2005	329	147				**6.1**	**4.6**	<1.0	<1.0
MW-13A	11/14/2005	515	333				**6.0**	**4.5**	<1.0	<1.0
MW-13A	5/16/2006	698	516				**7.1**	**4.6**	<1.0	<1.0
MW-13A	11/27/2006	893	711				**8.3**	**6.5**	**0.3**	<0.2
MW-13A	5/21/2007	1068	886				**8.2**	**7.0**	**0.4**	<0.2
MW-13A	11/28/2007	1259	1077				**6.4**	**4.2**	<1.0	<1.0
MW-13A	5/19/2008	1432	1250		-98		**8.7**	**6.8**	**0.3**	<0.2
MW-13A	11/23/2008	1620	1438		90		**6.5**	**3.7**	<1.0	<1.0
MW-13A	05/18/2009	1796	1614		266		**7.7**	**5.6**	<1.0	<1.0
MW-13A	11/17/2009	1979	1797		449		**9.2**	**6.0**	<1.0	<1.0
MW-13A	5/20/2010	2163	1981		633		**9.4**	**5.3**	<1.0	<1.0
MW-13A	11/10/2010	2337	2155		807		**3.6**	**2.8**	<1.0	<1.0
MW-13A	5/4/2011	2512	2330		982		**3.9**	**2.4**	<1.0	<1.0
MW-13A	11/3/2011	2695	2513		1165		**1.6**	<1.0	<1.0	<1.0
MW-13A	5/14/2012	2888	2706		1358		**2.3**	**0.8**	<0.2	<0.2
MW-13A	11/13/2012	3071	2889		1541		**2.2**	**0.8**	<0.2	<0.2
MW-13A	5/21/2013	3260	3078		3078		**4.5**	**2.5**	**0.5**	<0.2
MW-13A	11/12/2013	3435	3253		3253		**2.2**	**0.6**	<0.2	<0.2
MW-13A	5/7/2014	3611	3429		3429		**3.1**	**1.3**	<0.2	<0.2
MW-13A	11/4/2014	3792	3610		3610		**2.3**	**0.5**	<0.2	<0.2
MW-13A	4/28/2015	3967	3785		3785		**1.8**	**0.4**	<0.2	<0.2
MW-13A	10/27/2015	4149	3967		3967	-15	**1.5**	**0.3**	<0.2	<0.2
MW-13A	4/19/2016	4324	4142		4142	160	**1.6**	**0.3**	<0.2	<0.2
MW-13A	11/1/2016	4520	4338		4338	356	**2.3**	**0.7**	<0.2	<0.2
MW-13A	5/2/2017	4702	4520		4520	538	**1.1**	<0.2	<0.2	<0.2
MW-13A	11/8/2017	4892	4710		4710	728	**1.6**	**0.3**	<0.2	<0.2
MW-13A	5/1/2018	5066	4884		4884	902	**1.45**	**0.43**	<0.2	<0.2
MW-13A	11/5/2018	5254	5072		5072	1090	**1.91**	**0.58**	<0.2	<0.2
MW-13A	5/1/2019	5431	5249		5249	1267	**1.03**	**0.22**	<0.2	<0.2
MW-13A	11/4/2019	5618	5436		5436	1454	**1.19**	**0.35**	<0.2	<0.2
MW-13A	5/4/2020	5800	5618		5618	1636	**1.31**	**0.31**	<0.2	<0.2
MW-13A	11/5/2020	5985	5803		5803	1821	**2.10**	**0.76**	<0.2	<0.2
MW-13A	5/5/2021	6166	5984		5984	2002	**2.03**	**0.62**	<0.2	<0.2
MW-13A	11/3/2021	6348	6166		6166	2184	**2.81**	**1.31**	<0.20	<0.20
MW-13A	5/9/2022	6535	6353		6353	2371	**2.30**	**0.83**	**0.41**	<0.20
MW-13A	11/7/2022	6717	6535		6535	2553	**3.40**	**1.74**	**1.09**	<0.20
MW-13C	5/2/2004	-46					<1.0	<1.0	<1.0	**2.5**
MW-13C	10/25/2004	130	-52				<1.0	<1.0	<1.0	**3.3**
MW-13C	5/12/2005	329	147				<1.0	<1.0	<1.0	<1.0
MW-13C	11/14/2005	515	333				<1.0	<1.0	<1.0	**3.8**
MW-13C	5/16/2006	698	516				<1.0	<1.0	<1.0	**2.2**
MW-13C	11/27/2006	893	711				<0.2	<0.2	**0.8**	**3.4**
MW-13C	5/21/2007	1068	886				<0.2	<0.2	**0.8**	**4.4**
MW-13C	11/28/2007	1259	1077				<1.0	<1.0	<1.0	**2**
MW-13C	5/19/2008	1432	1250		-98		<0.2	<0.2	**0.2**	**0.6**
MW-13C	11/23/2008	1620	1438		90		<1.0	<1.0	<1.0	**2.2**
MW-13C	05/18/2009	1796	1614		266		<1.0	<1.0	<1.0	<1.0
MW-13C	11/17/2009	1979	1797		449		<1.0	<1.0	<1.0	<1.0

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					**5.3**	**1.4**	**134**	**2.4**
MW-13C	5/20/2010	2163	1981		633		<1.0	<1.0	<1.0	<1.0
MW-13C	11/10/2010	2337	2155		807		<1.0	<1.0	<1.0	<1.0
MW-13C	5/4/2011	2512	2330		982		<1.0	<1.0	<1.0	<1.0
MW-13C	11/3/2011	2695	2513		1165		<1.0	<1.0	<1.0	<1.0
MW-13C	5/14/2012	2888	2706		1358		<0.2	<0.2	<0.2	**0.3**
MW-13C	11/13/2012	3071	2889		1541		<2.0	<2.0	<2.0	<2.0
MW-13C	5/21/2013	3260	3078		1730		<2.0	<2.0	<2.0	<2.0
MW-13C	11/12/2013	3435	3253		1905		<2.0	<2.0	<2.0	<2.0
MW-13C	5/7/2014	3611	3429		2081		<1.0	<1.0	<1.0	<1.0
MW-13C	11/4/2014	3792	3610		2262		<0.2	<0.2	<0.2	**0.2**
MW-13C	4/28/2015	3967	3785		2437		<0.2	<0.2	<0.2	**0.3**
MW-13C	10/27/2015	4149	3967		2619	-15	<0.2	<0.2	<0.2	**0.2**
MW-13C	4/19/2016	4324	4142		2794	160	<0.2	<0.2	<0.2	**0.3**
MW-13C	11/1/2016	4520	4338		2990	356	<0.2	<0.2	<0.2	**0.2**
MW-13C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	<0.2	**0.3**
MW-13C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	<0.2	**0.3**
MW-13C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	<0.2	**0.25**
MW-13C	11/5/2018	5254	5072		3724	1090	<0.2	<0.2	<0.2	<0.2
MW-13C	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	<0.2	**0.22**
MW-13C	11/4/2019	5618	5436		4088	1454	<0.2	<0.2	<0.2	<0.2
MW-13C	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	<0.2	<0.2
MW-13C	11/5/2020	5985	5803		4455	1821	<0.2	<0.2	<0.2	<0.2
MW-13C	5/5/2021	6166	5984		4636	2002	<0.2	<0.2	<0.2	**0.26**
MW-13C	11/3/2021	6348	6166		4818	2184	<0.20	<0.20	<0.20	**0.24**
MW-13C	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	<0.20	**0.22**
MW-13C	11/7/2022	6717	6535		5187	2553	<0.20	<0.20	<0.20	**0.28**
MW-14C	5/4/2004	-44					<1.0	<1.0	**63**	**44**
MW-14C	10/26/2004	131	-51	-142			<1.0	<1.0	**22**	**75**
MW-14C	5/16/2005	333	151	60			<1.0	<1.0	**11**	**6.1**
MW-14C	11/15/2005	516	334	243			<1.0	<1.0	<1.0	**1.8**
MW-14C	5/17/2006	699	517	426			<1.0	<1.0	<1.0	<1.0
MW-14C	11/29/2006	895	713	622			<0.2	<0.2	<0.2	**1.0**
MW-14C	5/23/2007	1070	888	797			<1.0	<1.0	<1.0	**2.5**
MW-14C	12/3/2007	1264	1082	991			<1.0	<1.0	**1.1**	**11**
MW-14C	5/20/2008	1433	1251	1160	-97		<1.0	<1.0	**1.4**	**22**
MW-14C	11/24/2008	1621	1439	1348	91		<1.0	<1.0	<1.0	**4.3**
MW-14C	05/20/2009	1798	1616	1525	268		<1.0	<1.0	<1.0	**1.1**
MW-14C	11/17/2009	1979	1797	1706	449		<1.0	<1.0	<1.0	<1.0
MW-14C	5/24/2010	2167	1985	1894	637		<1.0	<1.0	<1.0	<1.0
MW-14C	11/10/2010	2337	2155	2064	807		<1.0	<1.0	<1.0	<1.0
MW-14C	5/5/2011	2513	2331	2240	983		<1.0	<1.0	<1.0	<1.0
MW-14C	11/13/2011	2705	2523	2432	1175		<0.2	<0.2	<0.2	<0.2
MW-14C	5/14/2012	2888	2706	2615	1358		<0.2	<0.2	<0.2	<0.2
MW-14C	11/14/2012	3072	2890	2799	1542		<2.0	<2.0	<2.0	<2.0
MW-14C	5/21/2013	3260	3078	2987	1730		<2.0	<2.0	<2.0	<2.0
MW-14C	11/12/2013	3435	3253	3162	1905		<2.0	<2.0	<2.0	<2.0
MW-14C	5/7/2014	3611	3429	3338	2081		<1.0	<1.0	<1.0	<1.0
MW-14C	11/5/2014	3793	3611	3520	2263		<0.2	<0.2	<0.2	<0.2
MW-14C	4/29/2015	3968	3786	3695	2438		<0.2	<0.2	<0.2	<0.2
MW-14C	10/27/2015	4149	3967	3876	2619	-15	<0.2	<0.2	<0.2	<0.2
MW-14C	4/19/2016	4324	4142	4051	2794	160	<0.2	<0.2	<0.2	**0.3**
MW-14C	11/2/2016	4521	4339	4248	2991	357	<0.2	<0.2	<0.2	<0.2
MW-14C	5/2/2017	4702	4520	4429	3172	538	<0.2	<0.2	<0.2	**0.2**
MW-14C	11/8/2017	4892	4710	4619	3362	728	<0.2	<0.2	**0.2**	**0.2**
MW-14C	5/1/2018	5066	4884	4793	3536	902	<0.2	<0.2	**0.22**	<0.2
MW-14C	11/6/2018	5255	5073	4982	3725	1091	<0.2	<0.2	<0.2	<0.2
MW-14C	5/1/2019	5431	5249	5158	3901	1267	<0.2	<0.2	<0.2	<0.2
MW-14C	11/4/2019	5618	5436	5345	4088	1454	<0.2	<0.2	<0.2	<0.2
MW-14C	5/4/2020	5800	5618	5527	4270	1636	<0.2	<0.2	<0.2	<0.2

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					**5.3**	**1.4**	**134**	**2.4**
MW-14C	11/4/2020	5984	5802	5711	4454	1820	<0.2	<0.2	<0.2	<0.2
MW-14C	5/4/2021	6165	5983	5892	4635	2001	<0.2	<0.2	<0.2	<0.2
MW-14C	11/2/2021	6347	6165	6074	4817	2183	<0.20	<0.20	<0.20	**0.22**
MW-14C	5/9/2022	6535	6353	6262	5005	2371	<0.20	<0.20	<0.20	**0.31**
MW-14C	11/7/2022	6717	6535	6444	5187	2553	<0.20	<0.20	<0.20	<0.20
MW-14E	5/4/2004	-44					<1.0	<1.0	<1.0	<1.0
MW-14E	10/26/2004	131	-51	-142			<1.0	<1.0	<1.0	<1.0
MW-14E	5/16/2005	333	151	60			<1.0	<1.0	<1.0	<1.0
MW-14E	11/15/2005	516	334	243			<1.0	<1.0	<1.0	<1.0
MW-14E	5/17/2006	699	517	426			<1.0	<1.0	<1.0	<1.0
MW-14E	11/29/2006	895	713	622			<0.2	<0.2	<0.2	<0.2
MW-14E	5/23/2007	1070	888	797			<1.0	<1.0	<1.0	<1.0
MW-14E	12/3/2007	1264	1082	991			<1.0	<1.0	<1.0	<1.0
MW-14E	5/20/2008	1433	1251	1160	-97		<1.0	<1.0	<1.0	<1.0
MW-14E	11/24/2008	1621	1439	1348	91		<1.0	<1.0	<1.0	<1.0
MW-14E	05/20/2009	1798	1616	1525	268		<1.0	<1.0	<1.0	<1.0
MW-14E	11/17/2009	1979	1797	1706	449		<1.0	<1.0	<1.0	<1.0
MW-15C	5/3/2004	-45					<1.0	<1.0	**9.1**	**11**
MW-15C	10/26/2004	131	-51				<1.0	<1.0	**11**	**17**
MW-15C	5/16/2005	333	151				<1.0	<1.0	**13**	**6.4**
MW-15C	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0
MW-15C	5/17/2006	699	517				<1.0	<1.0	<1.0	<1.0
MW-15C	11/29/2006	895	713				<0.2	<0.2	<0.2	<0.2
MW-15C	5/23/2007	1070	888				<1.0	<1.0	<1.0	**2.2**
MW-15C	12/3/2007	1264	1082				<1.0	<1.0	<1.0	**2.5**
MW-15C	5/20/2008	1433	1251		-97		<1.0	<1.0	**1.8**	**6.6**
MW-15C	11/24/2008	1621	1439		91		<1.0	<1.0	**1.9**	**6.6**
MW-15C	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0
MW-15C	11/18/2009	1980	1798		450		<1.0	<1.0	<1.0	<1.0
MW-15C	5/20/2010	2163	1981		633		<1.0	<1.0	<1.0	<1.0
MW-15C	11/10/2010	2337	2155		807		<1.0	<1.0	<1.0	<1.0
MW-15C	5/5/2011	2513	2331		983		<1.0	<1.0	<1.0	<1.0
MW-15C	11/13/2011	2705	2523		1175		<0.2	<0.2	<0.2	<0.2
MW-15C	5/14/2012	2888	2706		1358		<0.2	<0.2	<0.2	<0.2
MW-15C	11/13/2012	3071	2889		1541		<2.0	**3.2**	<2.0	<2.0
MW-15C	5/21/2013	3260	3078		1730		<5.0	<5.0	<5.0	<5.0
MW-15C	11/12/2013	3435	3253		1905		<2.0	<2.0	<2.0	**2.3**
MW-15C	5/7/2014	3611	3429		2081		<2.0	<2.0	<2.0	**2.9**
MW-15C	11/5/2014	3793	3611		2263		<0.2	<0.2	**0.5**	**2.5**
MW-15C	4/29/2015	3968	3786		2438		<0.2	<0.2	**0.6**	**2.4**
MW-15C	10/27/2015	4149	3967		2619	-15	<0.2	<0.2	**0.5**	**2.0**
MW-15C	4/19/2016	4324	4142		2794	160	<0.2	**0.6**	**1.2**	**0.5**
MW-15C	11/2/2016	4521	4339		2991	357	<0.2	**0.3**	**1.7**	**0.7**
MW-15C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	**1.2**	**0.5**
MW-15C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	**1.3**	**0.4**
MW-15C	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0
MW-15C	11/5/2018	5254	5072		3724	1090	<2.0	<2.0	<2.0	<2.0
MW-15C	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	**0.57**	**0.29**
MW-15C	11/4/2019	5618	5436		4088	1454	<0.2	<0.2	**0.39**	**0.24**
MW-15C	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	**0.58**	**1.16**
MW-15C	11/4/2020	5984	5802		4454	1820	<0.2	<0.2	**0.36**	**0.39**
MW-15C	5/4/2021	6165	5983		4635	2001	<0.2	<0.2	**0.56**	**1.15**
MW-15C	11/2/2021	6347	6165		4817	2183	<0.20	<0.20	**0.42**	**0.25**
MW-15C	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	**0.61**	**0.91**
MW-15C	11/7/2022	6717	6535		5187	2553	<0.20	<0.20	<0.20	<0.20
MW-15D	5/3/2004	-45					<1.0	<1.0	<1.0	<1.0
MW-15D	10/26/2004	131	-51				<1.0	<1.0	<1.0	<1.0
MW-15D	5/16/2005	333	151				<1.0	<1.0	<1.0	<1.0

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					**5.3**	**1.4**	**134**	**2.4**
MW-15D	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0
MW-15D	5/17/2006	699	517				<1.0	<1.0	<1.0	<1.0
MW-15D	11/29/2006	895	713				<1.0	<1.0	<1.0	<1.0
MW-15D	5/23/2007	1070	888				<1.0	<1.0	<1.0	<1.0
MW-15D	12/3/2007	1264	1082				<1.0	<1.0	<1.0	<1.0
MW-15D	5/20/2008	1433	1251		-97		<1.0	<1.0	<1.0	<1.0
MW-15D	11/24/2008	1621	1439		91		<1.0	<1.0	<1.0	<1.0
MW-15D	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0
MW-15D	11/18/2009	1980	1798		450		<1.0	<1.0	<1.0	<1.0
MW-16A	5/2/2004	-46					**1.2**	**1.2**	**2.3**	<1.0
MW-16A	10/25/2004	130	-52				**1.2**	**1.3**	**1.8**	<1.0
MW-16A	5/12/2005	329	147				**1.2**	**1.8**	**2.6**	<1.0
MW-16A	11/15/2005	516	334				**1.3**	**2.2**	**2.1**	<1.0
MW-16A	5/16/2006	698	516				**1.0**	**1.4**	**2.3**	<1.0
MW-16A	11/26/2006	892	710				<0.2	**0.8**	**4.2**	<0.2
MW-16A	5/22/2007	1069	887				**1.1**	**1.3**	**1.9**	<1.0
MW-16A	11/28/2007	1259	1077				**1.7**	**1.2**	**1.2**	<1.0
MW-16A	5/19/2008	1432	1250		-98		**1.2**	**1.3**	**1.2**	<0.2
MW-16A	11/23/2008	1620	1438		90		**1.5**	**1.4**	**1.0**	<1.0
MW-16A	05/18/2009	1796	1614		266		**1.6**	**1.6**	<1.0	<1.0
MW-16A	11/16/2009	1978	1796		448		**2.2**	**1.5**	<1.0	<1.0
MW-16A	5/20/2010	2163	1981		633		**1.4**	**1.4**	<1.0	<1.0
MW-16A	11/10/2010	2337	2155		807		**1.3**	**1.1**	<1.0	<1.0
MW-16A	5/4/2011	2512	2330		982		**1.6**	**1.4**	<1.0	<1.0
MW-16A	11/13/2011	2705	2523		1175		**1.4**	**1.3**	**0.5**	<0.2
MW-16A	5/14/2012	2888	2706		1358		**1.6**	**1.7**	**0.5**	<0.2
MW-16A	11/14/2012	3072	2890		1542		**1.1**	**1.5**	**0.6**	<0.2
MW-16A	5/21/2013	3260	3078		1730		**1.4**	**1.5**	<0.5	<0.5
MW-16A	11/12/2013	3435	3253		1905		**2.1**	**1.8**	**0.3**	<0.2
MW-16A	5/8/2014	3612	3430		2082		**1.4**	**1.6**	**0.4**	<0.2
MW-16A	11/5/2014	3793	3611		2263		**1.6**	**1.5**	**0.4**	<0.2
MW-16A	4/28/2015	3967	3785		2437		**1.4**	**1.4**	**0.3**	<0.2
MW-16A	10/26/2015	4148	3966		2618	-16	**1.5**	**1.5**	**0.3**	<0.2
MW-16A	4/19/2016	4324	4142		2794	160	**0.8**	**0.7**	**10**	<0.2
MW-16A	11/2/2016	4521	4339		2991	357	**0.6**	**0.3**	**14**	**0.5**
MW-16A	5/2/2017	4702	4520		3172	538	**0.7**	**0.2**	**5.7**	**3.1**
MW-16A	11/8/2017	4892	4710		3362	728	<0.2	<0.2	**0.7**	**0.7**
MW-16A	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0
MW-16A	11/5/2018	5254	5072		3724	1090	<2.0	<2.0	<2.0	<2.0
MW-16A	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	**0.35**	<0.2
MW-16A	11/4/2019	5618	5436		4088	1454	<0.2	<0.2	**0.32**	**0.22**
MW-16A	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	**0.27**	<0.2
MW-16A	11/4/2020	5984	5802		4454	1820	<0.2	<0.2	**0.32**	<0.2
MW-16A	5/4/2021	6165	5983		4635	2001	**0.21**	<0.2	**0.28**	<0.2
MW-16A	11/2/2021	6347	6165		4817	2183	<0.20	<0.20	**0.41**	**0.28**
MW-16A	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	**0.29**	<0.20
MW-16C	5/2/2004	-46					<1.0	<1.0	**1.7**	**5.4**
MW-16C	10/25/2004	130	-52				<1.0	<1.0	**2.4**	**8.5**
MW-16C	5/12/2005	329	147				<1.0	<1.0	**2.8**	**7.7**
MW-16C	11/15/2005	516	334				<1.0	<1.0	**4.6**	**12**
MW-16C	5/16/2006	698	516				<1.0	<1.0	**5.2**	**6.3**
MW-16C	11/26/2006	892	710				**1.2**	**2.3**	**2.0**	<0.2
MW-16C	5/22/2007	1069	887				<1.0	<1.0	**8.8**	**10**
MW-16C	11/28/2007	1259	1077				<1.0	<1.0	**7**	**8.9**
MW-16C	5/19/2008	1432	1250		-98		<0.2	<0.2	**7.8**	**7.9**
MW-16C	11/23/2008	1620	1438		90		<1.0	<1.0	**5.3**	**8.8**
MW-16C	05/18/2009	1796	1614		266		<1.0	<1.0	**5.0**	**6.3**
MW-16C	11/16/2009	1978	1796		448		<1.0	<1.0	**4.9**	**5.6**

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					5.3	1.4	134	2.4
MW-16C	5/20/2010	2163	1981		633		<1.0	<1.0	**3.7**	**3.4**
MW-16C	11/10/2010	2337	2155		807		<1.0	<1.0	**3.3**	**2.8**
MW-16C	5/4/2011	2512	2330		982		<1.0	<1.0	**3.7**	**3.2**
MW-16C	11/13/2011	2705	2523		1175		<0.2	<0.2	**3.3**	**2.5**
MW-16C	5/14/2012	2888	2706		1358		<0.2	<0.2	**4.8**	**4.2**
MW-16C	11/14/2012	3072	2890		1542		<0.2	<0.2	**4.9**	**3.8**
MW-16C	5/21/2013	3260	3078		1730		<0.5	<0.5	**3.9**	**2.8**
MW-16C	11/12/2013	3435	3253		1905		<0.2	<0.2	**4.4**	**2.1**
MW-16C	5/8/2014	3612	3430		2082		<0.2	<0.2	**3.4**	**1.2**
MW-16C	11/5/2014	3793	3611		2263		<0.2	<0.2	**3.4**	**1.3**
MW-16C	4/28/2015	3967	3785		2437		<0.2	<0.2	**2.2**	**1.2**
MW-16C	10/26/2015	4148	3966		2618	-16	<0.2	<0.2	**2.7**	**1.1**
MW-16C	4/19/2016	4324	4142		2794	160	<0.2	<0.2	**0.9**	**0.3**
MW-16C	11/2/2016	4521	4339		2991	357	<0.2	<0.2	**1.9**	**0.3**
MW-16C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	**0.4**	**0.2**
MW-16C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	**0.7**	**0.4**
MW-16C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	<0.2	<0.2
MW-16C	11/5/2018	5254	5072		3724	1090	<0.2	<0.2	**0.50**	**0.28**
MW-16C	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	**0.41**	**0.33**
MW-16C	11/4/2019	5618	5436		4088	1454	<0.2	<0.2	**0.58**	**0.48**
MW-16C	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	**1.72**	**1.32**
MW-16C	11/4/2020	5984	5802		4454	1820	<0.2	<0.2	**1.71**	**0.89**
MW-16C	5/4/2021	6165	5983		4635	2001	<0.2	<0.2	**1.59**	**0.81**
MW-16C	11/2/2021	6347	6165		4817	2183	<0.20	<0.20	**1.63**	**0.58**
MW-16C	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	**1.44**	**0.78**
MW-16C	11/7/2022	6717	6535		5187	2553	<0.20	<0.20	**1.33**	**0.84**
MW-17A	5/2/2004	-46					**4.8**	**6.5**	**1.0**	<1.0
MW-17A	10/25/2004	130	-52				**5.2**	**4.8**	**1.2**	<1.0
MW-17A	11/15/2005	516	334				**4.0**	**5.4**	**1.1**	<1.0
MW-17A	5/15/2006	697	515				**4.2**	**4.4**	<1.0	<1.0
MW-17A	11/27/2006	893	711				**2.2**	**6.3**	**1.0**	<0.2
MW-17A	5/21/2007	1068	886				**4.7**	**5.3**	**1.0**	<0.2
MW-17A	11/29/2007	1260	1078				**4.2**	**4.3**	<1.0	<1.0
MW-17A	5/19/2008	1432	1250		-98		**4.3**	**5.1**	**0.8**	<0.2
MW-17A	11/23/2008	1620	1438		90		**4.2**	**5.2**	**1.2**	<1.0
MW-17A	05/19/2009	1797	1615		267		**3.2**	**4.9**	**1.4**	<1.0
MW-17A	11/12/2009	1974	1792		444		**3.7**	**4.5**	**1.1**	<1.0
MW-17A	5/20/2010	2163	1981		633		**4.0**	**3.1**	<1.0	<1.0
MW-17A	11/8/2010	2335	2153		805		**2.3**	**4.8**	**2.3**	<1.0
MW-17A	5/3/2011	2511	2329		981		**3.1**	**2.2**	**1.5**	<1.0
MW-17A	11/3/2011	2695	2513		1165		**2.6**	**2.8**	**1.0**	<1.0
MW-17A	5/14/2012	2888	2706		1358		**3.1**	**2.0**	**0.5**	<0.2
MW-17A	11/13/2012	3071	2889		1541		**2.8**	**3.5**	**0.9**	<0.2
MW-17A	5/20/2013	3259	3077		1729		**3.6**	**2.8**	**0.8**	<0.2
MW-17A	11/4/2014	3792	3610		2262		**3.9**	**3.4**	**1.0**	<0.2
MW-17A	5/6/2014	3610	3428		2080		**3.6**	**2.6**	**0.4**	<0.2
MW-17A	11/4/2014	3792	3610		2262		**2.9**	**3.1**	**0.9**	<0.2
MW-17A	4/28/2015	3967	3785		2437		**3.4**	**2.3**	**0.4**	<0.2
MW-17A	10/26/2015	4148	3966		2618	-16	**3.4**	**2.6**	**1.1**	<0.2
MW-17A	4/19/2016	4324	4142		2794	160	<2.0	<2.0	**8**	<2.0
MW-17A	11/1/2016	4520	4338		2990	356	<2.0	**0.4**	**8.2**	**0.8**
MW-17A	5/3/2017	4703	4521		3173	539	<0.2	<0.2	**0.8**	**2.2**
MW-17A	11/7/2017	4891	4709		3361	727	<0.2	<0.2	**1.3**	**5.9**
MW-17A	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	**2.82**
MW-17A	11/5/2018	5254	5072		3724	1090	<2.0	<2.0	<2.0	<2.0
MW-17A	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	<0.2	**0.27**
MW-17A	11/5/2019	5619	5437		4089	1455	<0.2	<0.2	<0.2	<0.2
MW-17A	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	<0.2	<0.2

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					**5.3**	**1.4**	**134**	**2.4**
MW-17A	11/4/2020	5984	5802		4454	1820	<0.2	<0.2	<0.2	<0.2
MW-17A	5/4/2021	6165	5983		4635	2001	<0.2	<0.2	<0.2	<0.2
MW-17A	11/2/2021	6347	6165		4817	2183	<0.20	<0.20	<0.20	<0.20
MW-17A	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	<0.20	<0.20
MW-17A	11/8/2022	6718	6536		5188	2554	<0.20	<0.20	<0.20	<0.20
MW-18A	5/2/2004	-46	-228				<1.0	<1.0	<1.0	<1.0
MW-18C	5/2/2004	-46					<1.0	<1.0	<1.0	<1.0
MW-18C	10/25/2004	130	-52				<1.0	<1.0	<1.0	<1.0
MW-18C	5/12/2005	329	147				<1.0	<1.0	<1.0	<1.0
MW-18C	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0
MW-18C	5/17/2006	699	517				<1.0	<1.0	<1.0	<1.0
MW-18C	11/27/2006	893	711				<0.2	<0.2	<0.2	<0.2
MW-18C	5/21/2007	1068	886				<0.2	<0.2	<0.2	**0.2**
MW-18C	11/28/2007	1259	1077				<1.0	<1.0	<1.0	<1.0
MW-18C	5/19/2008	1432	1250		-98		<0.2	<0.2	<0.2	**0.2**
MW-18C	11/23/2008	1620	1438		90		<1.0	<1.0	<1.0	<1.0
MW-18C	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0
MW-18C	11/17/2009	1979	1797		449		<1.0	<1.0	<1.0	<1.0
MW-19C	5/2/2004	-46					<1.0	<1.0	<1.0	<1.0
MW-19C	10/25/2004	130	-52				<1.0	<1.0	<1.0	<1.0
MW-19C	5/12/2005	329	147				<1.0	<1.0	<1.0	<1.0
MW-19C	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0
MW-19C	5/17/2006	699	517				<1.0	<1.0	<1.0	<1.0
MW-19C	11/27/2006	893	711				<0.2	<0.2	**0.3**	<0.2
MW-19C	5/22/2007	1069	887				<1.0	<1.0	<1.0	<1.0
MW-19C	11/29/2007	1260	1078				<1.0	<1.0	<1.0	<1.0
MW-19C	5/20/2008	1433	1251		-97		<1.0	<1.0	<1.0	<1.0
MW-19C	11/23/2008	1620	1438		90		<1.0	<1.0	<1.0	<1.0
MW-19C	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0
MW-19C	11/18/2009	1980	1798		450		<1.0	<1.0	<1.0	<1.0
MW-20C	5/3/2004	-45					<1.0	<1.0	**1.4**	**2.4**
MW-20C	10/25/2004	130	-52				<1.0	<1.0	**1.7**	**4.6**
MW-20C	5/12/2005	329	147				<1.0	<1.0	**1.7**	**2.3**
MW-20C	11/15/2005	516	334				<1.0	<1.0	**2.1**	**2.9**
MW-20C	5/17/2006	699	517				<1.0	<1.0	**1.8**	**1.6**
MW-20C	11/29/2006	895	713				<0.2	**0.2**	**2.1**	**1.5**
MW-20C	5/21/2007	1068	886				<0.2	<0.2	**1.6**	**1.8**
MW-20C	11/29/2007	1260	1078				<1.0	<1.0	**1.6**	**1.3**
MW-20C	5/20/2008	1433	1251		-97		<1.0	<1.0	**1.6**	**2.5**
MW-20C	11/23/2008	1620	1438		90		<1.0	<1.0	**1.5**	**2.7**
MW-20C	05/19/2009	1797	1615		267		<1.0	<1.0	**1.4**	**2.0**
MW-20C	11/18/2009	1980	1798		450		<1.0	<1.0	**1.7**	**2.3**
MW-20C	5/20/2010	2163	1981		633		<1.0	<1.0	**1.3**	**1.8**
MW-20C	11/8/2010	2335	2153		805		<1.0	<1.0	**1.4**	**1.4**
MW-20C	5/4/2011	2512	2330		982		<1.0	<1.0	**1.1**	**1.8**
MW-20C	11/3/2011	2695	2513		1165		<1.0	<1.0	**1.3**	**2.1**
MW-20C	5/14/2012	2888	2706		1358		<0.2	<0.2	**1.2**	**1.5**
MW-20C	11/13/2012	3071	2889		1541		<2.0	<2.0	<2.0	<2.0
MW-20C	5/21/2013	3260	3078		1730		<5.0	<5.0	<5.0	<5.0
MW-20C	11/12/2013	3435	3253		1905		<2.0	<2.0	<2.0	<2.0
MW-20C	5/7/2014	3611	3429		2081		<2.0	<2.0	<2.0	<2.0
MW-20C	11/5/2014	3793	3611		2263		<0.2	<0.2	**0.9**	**0.7**
MW-20C	4/28/2015	3967	3785		2437		<0.2	<0.2	**0.7**	**1.0**
MW-20C	10/27/2015	4149	3967		2619	-15	<0.2	<0.2	**1.0**	**0.9**
MW-20C	4/19/2016	4324	4142		2794	160	<0.2	**0.2**	**2.2**	**0.3**
MW-20C	11/2/2016	4521	4339		2991	357	<0.2	**0.2**	**0.6**	**0.5**
MW-20C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	**1.5**	**0.4**

Table 5
SWMU-20 Cleanup Action Summary—Non-Source Zone
Boeing Developmental Center
Tukwila, Washington

Well	Date	Elapsed Time (days) (a)					Volatile Organic Compounds			
		Injection #1	Injection #2	Injection #3	Injection #4	Injection #5	PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	VC (µg/L)
		Proposed Groundwater Cleanup Levels (c):					**5.3**	**1.4**	**134**	**2.4**
MW-20C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	**1.5**	**0.5**
MW-20C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	**1.09**	<0.2
MW-20C	11/5/2018	5254	5072		3724	1090	<0.2	<0.2	**1.02**	**0.25**
MW-20C	5/1/2019	5431	5249		3901	1267	<0.2	<0.2	**1.14**	**0.28**
MW-20C	11/4/2019	5618	5436		4088	1454	<0.2	<0.2	**1.15**	**0.42**
MW-20C	5/4/2020	5800	5618		4270	1636	<0.2	<0.2	**0.90**	**0.29**
MW-20C	11/4/2020	5984	5802		4454	1820	<0.2	<0.2	**0.66**	**0.21**
MW-20C	5/4/2021	6165	5983		4635	2001	<0.2	<0.2	**0.85**	**0.27**
MW-20C	11/3/2021	6348	6166		4818	2184	<0.20	<0.20	**0.62**	**0.24**
MW-20C	5/9/2022	6535	6353		5005	2371	<0.20	<0.20	**0.43**	<0.20
MW-20C	11/7/2022	6717	6535		5187	2553	<0.20	<0.20	**0.30**	<0.20

Abbreviations and Acronyms:

PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
µg/L = micrograms per liter

Box = Exceedance of proposed cleanup level
Bold = detected compund

Notes:

(a) Injections occurred on:
6/17/04 (6A, B, C; 9A, B, C)
12/16-17/04 (6A, 6B;9A,9B)
3/17/05 (14A)
8/25-28/08 (6A, 9A, 10A)
10/27-11/11/15 (6A, 6B, 10C, 15C, 16A, 16C, 17A, 20C, 22A)

(b) Conducted at Well MW-14A only.

(c) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).

Table 6
SWMU-20 Naphthalene Summary
Boeing Developmental Center
Tukwila, Washington

Well / Date	Naphthalene Concentration (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
MW-06A																				5.00 U	5.00 U	5.00 U	5.00 U	
MW-06B	1.00 U	**2.80**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.40**	1.00 U	1.00 U	1.00 U	1.00 U	**4.50**	**1.80**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	
MW-06C	**29.3**	**10.4**	**9.10**	**8.80**	**7.20**	1.00 U	**18.4**	**3.00**	**25.1**	**3.40**	1.00 U	**7.70**	**45.0**	**9.73**	**2.80**	5.00 U	5.00 U	5.00 U	**220**	**14.0**	5.00 U	5.00 U	5.00 U	
MW-08C	**352**	**401**	**155**	**370**	**234**	**118**	**292**	**600**	**38.6**	**230**	**137**	**109**	**174**	**125**	**210**	**180**	**290**	**390**	**300**	**130**		**180**		
MW-09A	50.0 U	3.33	10.0 U	4.00 U	5.00 U	1.00 U	**7.00**	1.00 U	10.0 U	1.00 U	10.0 U	10.0 U	**8.65**	**3.63**	1.00 U	5.00 U	5.00 U	75.0 U	100 U	100 U	15.0 U	25.0 U	50.0 U	
MW-09B	10.0 U	2.00	1.00 U	1.00 U	**13.8**	**22.4**	2.00 U	3.33 U	10.0 U	**3.40**	**4.60**	2.00 U	**11.2**	**2.24**	**3.10**	5.00 U	5.00 U	5.00 U	5.00 U	15.0 U	25.0 U	25.0 U	50.0 U	
MW-09C	1.00 U	**1.20**	1.00 U	**8.80**	**6.50**	1.00 U	**25.0**	1.00 U	1.00 U	**9.90**	**6.80**	1.00 U	**1.67**	**1.80**	**1.30**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**7.70**	**68.0**	
MW-09D	1.00 U	**1.30**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-10A	10.0 U	**4.20**	3.33	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	
MW-10C	**14.3**	**30.5**	**6.30**	**56.1**	**6.40**	**7.60**	**5.80**	**2.80**	1.00 U	**3.80**	**4.70**	**2.70**	**5.77**	1.00 U	**36.0**	**5.00**	5.00 U	5.00 U	5.00 U	**9.40**		5.00 U		
MW-11A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**5.10**	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-12A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-13A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-13C	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-14A	1.00 U	10.0 U	5.00 U	4.00 U	2.00 U	2.00 U	2.00 U	1.00 U	1.00 U	**150**	**4.80**	**235**	**113**	**84.7**	**35.0**	**5.70**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	25.0 U	25.0 U	
MW-14C	2.00 U	10.0 U	1.00 U	10.0 U	10.0 U	10.0 U	**11.8**	**7.20**	**6.50**	**6.30**	**7.30**	**17.2**	**8.70**	**6.79**	**3.50**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-14E	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-15A	**424**	**239**	**152**	**247**	**136**	**67.3**	**465**	**1,721**	**916**	**58.9**	**561**	**797**	**696**	**986**	**1,100**	**840**	**510**	**370**	**490**	**700**		**430**		
MW-15C	1.00 U	**1.00**	1.00 U	**4.40**	10.0 U	10.0 U	10.0	3.33 U	**4.80**	2.00 U	2.00 U	**29.8**	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-15D								1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**7.40**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-16A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**3.10**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-16C	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-17A	1.00 U	**62.0**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-17C	1.00 U	1.00 U	**26.6**	1.00 U	**0.60**	**37.3**	**106**	1.00 U	1.00 U	**31.9**	**16.6**	**13.7**		**12.1**										
MW-17D	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		1.00 U										
MW-18A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U						5.00 U				
MW-18C	1.00 U	1.00 U	1.00 U	**1.70**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.10**	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-18D	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U										
MW-19A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.54**						5.00 U			5.00 U	
MW-19C	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-19D	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U										
MW-20A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**5.48**										
MW-20C	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**1.81**	1.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U		5.00 U		
MW-20D	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U										
MW-21A	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	5.00 U	5.00 U							
MW-21C														**207**	1.00 U	5.00 U	5.00 U							
MW-22A																							**9.90**	
MW-23A																							**19.0**	

Table 6
SWMU-20 Naphthalene Summary
Boeing Developmental Center
Tukwila, Washington

Well / Date	Naphthalene Concentration (µg/L)																						
	May-05	Aug-05	Nov-05	Feb-06	May-06	Aug-06	Nov-06	Feb-07	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
MW-06A	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	20.0 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-06B	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**0.60**	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-06C	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**5.00**	5.00 U	5.00 U	**4.60**	5.00 U	5.00 U	5.00 U	5.00 U										
MW-08C	**130**		**82.0**		**910**		**440**		**500**	**540**	**180**	**1,100**	**62.0**	**65.0**										
MW-09A	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	0.50 U	5.00 U	50.0 U	25.0 U	5.00 U	5.00 U	5.00 U	**5.30**	**9.50**	**7.50**	**56.0**	**23.0**	**9.90**	**8.70**
MW-09B	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	**0.60**	5.00 U	5.00 U	5.00 U										
MW-09C	**51.0**	**29.0**	**12.0**	**5.10**	5.00 U	5.00 U	**14.0**	**18.0**	**5.50**	5.00 U	**6.70**	5.00 U	**56.0**	**69.0**										
MW-09D	5.00 U		5.00 U		5.00 U		2.50 U		5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U										
MW-10A	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	10.0 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.50 U	0.50 U
MW-10C	5.00 U		5.00 U		5.00 U		0.50 U		5.00 U	5.00 U	0.50 U	5.00 U	**100**	39.0 U	12.0 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-11A	5.00 U		5.00 U		5.00 U		5.00 U		5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U
MW-12A	5.00 U		5.00 U		5.00 U		0.50 U		5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-13A	5.00 U		5.00 U		5.00 U		0.50 U		0.50 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-13C	5.00 U		5.00 U		5.00 U		**16.0**		**16.0**	5.00 U	**0.50**	5.00 U	5.00 U	5.00 U	22.0 U	**6.50**	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	2.50 U	0.50 U
MW-14A	50.0 U	50.0 U	15.0 U	5.00 U	10.0 U	5.00 U	**7.00**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	**0.50**	0.50 U	**0.80**	0.50 U	**0.70**	0.50 U	0.50 U
MW-14C	5.00 U		5.00 U		5.00 U		**6.30**		**6.20**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	15.0 U	5.00 U	5.00 U	0.50 U	0.50 U	5.00 U	5.00 U	5.00 U	2.50 U	0.50 U
MW-14E	5.00 U		5.00 U		5.00 U		0.50 U		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U										
MW-15A	**440**		**390**		**220**		**180**		**72.0**	**170**	**180**	**230**	**170**	**190**	**310**	**240**	**210**	**190**	**170**	**120**	**84.0**	**180**	**89.0**	**190**
MW-15C	5.00 U		5.00 U		5.00 U		0.50 U		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U
MW-15D	5.00 U		5.00 U		5.00 U		2.50 U		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U										
MW-16A	5.00 U		5.00 U		5.00 U		0.50 U		5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-16C	5.00 U		5.00 U		5.00 U		0.50 U		5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-17A			5.00 U		5.00 U		0.50 U		0.50 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-17C																								
MW-17D																								
MW-18A																								
MW-18C	5.00 U		5.00 U		5.00 U		0.50 U		**0.60**	5.00 U	0.50 U	**86.0**	**47.0**	5.00 U										
MW-18D																								
MW-19A	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U										
MW-19C	5.00 U		5.00 U		5.00 U		**0.50**		5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U										
MW-19D																								
MW-20A																								
MW-20C	5.00 U		5.00 U		5.00 U		**0.80**		0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U	5.00 U	5.00 U	5.00 U	5.00 U	0.50 U
MW-20D																								
MW-21A																								
MW-21C																								
MW-22A	**140**	**180**	**170**	**210 J**	**120**	**200**	**140**	**110**	**100**	**25.0**	**41.0**	**32.0**	**51.0**	**15.0**	**14.0**	**16.0**	**20.0**	**12.0**	**15.0**	**9.20**	**11.0**	**7.10**	**9.80**	**6.50**
MW-23A	**130**	**100**	5.00 U	**45.0**	**69.0**	**140**	**9.00**	**26.0**	**36.0**	**6.10**	**5.30**	5.00 U	**9.80**	5.00 U										

Table 6
SWMU-20 Naphthalene Summary
Boeing Developmental Center
Tukwila, Washington

Well / Date	Naphthalene Concentration (µg/L)														
	Apr-15	Oct-15	Nov-16	May-17	Nov-17	May-18	Nov-18	May-19	Nov-19	May-20	Nov-20	May-21	Nov-21	May-22	Nov-22
MW-06A	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-06B	0.50 U	0.50 U	0.50 U	**0.70**	0.50 U	5.00 U	0.50 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	**6.72**	**3.52**
MW-06C															
MW-08C															
MW-09A	**2.60**	**1.80**	**0.90**	**100**	**5.80**	**90.7**	**9.51**	**3.26**	**0.86**	**19.0**	**1.47**	**0.82**	**0.67**	**245**	**1.81**
MW-09B															
MW-09C															
MW-09D															
MW-10A															
MW-10C	**10.0**	0.50	**8.80**	**7.70**	**8.60**	**4.27**	**1.18**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-11A	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**2.31**	0.50 U
MW-12A															
MW-13A	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-13C	**3.30**	0.50 U	0.50 U	**14.0**	**31.0**	**25.1**	**5.54**	**0.53**	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-14A															
MW-14C	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-14E															
MW-15A															
MW-15C	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-15D															
MW-16A	0.50 U	0.50 U	**0.60**	0.50 U	0.50 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
MW-16C	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.78 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-17A	0.50 U	0.50 U		0.50 U	0.50 U	5.00 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-17C															
MW-17D															
MW-18A															
MW-18C															
MW-18D															
MW-19A															
MW-19C															
MW-19D															
MW-20A															
MW-20C	0.50 U	0.50 U	0.50 U	0.50 U	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
MW-20D															
MW-21A															
MW-21C															
MW-22A	**6.20**	**4.70**	**110**	**200**	**220**	**608**	**302**	**783**	**738**	**671**	**191**	**19.8**	**16.9**	**10.7**	**10.2**
MW-23A															

Abbreviations and Acronyms:

µg/L = micrograms per liter

Notes:

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

U = Analyte is not detected above the reporting limit.

Bold = detected compound

= exceeds Proposed Cleanup Level (PCUL) (26 µg/L)

Table 7
Performance Monitoring Matrix
Boeing Developmental Center
Tukwila, Washington

Well ID	Frequency	Month(s)	VOCs (8260C) [Non-preserved]	Short-List VOCs - PCE, TCE, cDCE, VC (8260C) [Non-preserved]	Methane, Ethane, Ethene (RSKSOP-175, modified)	AMEE (RSKSOP-175, modified)	TOC (SM5310C)	BTEX (8260C)	TPH-G (NWTPH-G)	Sulfate (EPA 300.0)	Nitrate, Nitrite (EPA 300.0)	Nitrate (EPA 300.0)	Total and Dissolved Arsenic/Copper (200.8 ICP-MS)	Ferrous Iron (Field measurement)	Notes
AOC-5															
BDC-101	Semiannual	May/Nov						X	X	X	X				
BDC-102	Semiannual	May/Nov						X	X	X	X				
BDC-103	Semiannual	May/Nov						X	X	X	X				
BDC-104	Semiannual	May/Nov						X	X	X	X				
MW-17A	Semiannual	May/Nov	X							X		X		X	Nitrate contingency monitoring location; VOCs reported for SWMU-20
MW-18A	Semiannual	May/Nov								X		X		X	Nitrate contingency monitoring location
MW-21A	Semiannual	May/Nov								X		X		X	Nitrate contingency monitoring location
SWMU-17															
BDC-05-02	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-03	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-04	Semiannual	May/Nov		X		X	X			X	X		X	X	Nitrate contingency monitoring location
BDC-05-05	Semiannual	May/Nov		X			X			X			X	X	
BDC-05-07	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-08	Semiannual	May/Nov		X			X			X			X	X	
BDC-05-09	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-10	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-11	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-12	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-13	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-14	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-15	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-16	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-17	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-18	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-19	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-20	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-21	Semiannual	May/Nov		X		X	X			X			X	X	
BDC-05-22	Semiannual	May/Nov		X		X	X			X			X	X	AMEE added started in 2023.
BDC-05-23	Semiannual	May/Nov		X			X			X			X	X	
BDC-05-24	Semiannual	May/Nov		X		X	X			X			X	X	

Table 7
Performance Monitoring Matrix
Boeing Developmental Center
Tukwila, Washington

Well ID	Frequency	Month(s)	VOCs (8260C) [Non-preserved]	Short-List VOCs - PCE, TCE, cDCE, VC (8260C) [Non-preserved]	Methane, Ethane, Ethene (RSKSOP-175, modified)	AMEE (RSKSOP-175, modified)	TOC (SM5310C)	BTEX (8260C)	TPH-G (NWTPH-G)	Sulfate (EPA 300.0)	Nitrate, Nitrite (EPA 300.0)	Nitrate (EPA 300.0)	Total and Dissolved Arsenic/Copper (200.8 ICP-MS)	Ferrous Iron (Field measurement)	Notes
SWMU-20															
MW-6A	Semiannual	May/Nov	X		X		X			X					MNA monitoring location
MW-6B	Semiannual	May/Nov	X		X		X			X					MNA monitoring location
MW-9A	Semiannual	May/Nov	X		X		X			X					MNA monitoring location
MW-10C	Semiannual	May/Nov	X												
MW-11A	Semiannual	May/Nov	X												
MW-13A	Semiannual	May/Nov	X												
MW-13C	Semiannual	May/Nov	X												
MW-14C	Semiannual	May/Nov	X												
MW-15C	Semiannual	May/Nov	X												
MW-16A	Semiannual	May/Nov	X												
MW-16C	Semiannual	May/Nov	X												
MW-20C	Semiannual	May/Nov	X												
MW-22A	Semiannual	May/Nov	X		X		X			X					MNA monitoring location

Notes:

Analytical method designated in parentheses following each anaylte name (e.g. "8260C").
Laboratory services changed to Analytical Resources, Inc. per client (January 2018).
Nitrate contingency monitoring locations are only sampled for nitrate if upgradient action levels are exceeded.
Matrix updated May 2020:
MW-17A sampled as part of AOC-05, but VOCs at this well are reported for SWMU-20.
Samples at MW-17A for VOC analysis collected in non-preserved containers.
Unused columns removed.

Abbreviations and Acronyms:

AMEE = acetylene, methane, ethane, and ethene
AOC = area of concern
BTEX = benzene, toluene, ethylbenzene, and xylenes
cDCE = *cis* -1,2-dichloroethene
MNA = monitored natural attenuation
PCE = tetrachloroethene
SWMU = solid waste management unit
TCE = trichloroethene
TOC = total organic carbon
VC = vinyl chloride
VOCs = volatile organic compounds

APPENDIX A

Laboratory Reports

Analytical Resources, LLC
Analytical Chemists and Consultants

09 June 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22E0159	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22E0159

LANDAU ASSOCIATES

Chain-of-Custody Record

☒ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 5/9/22
Page 1 of 1

Turnaround Time: Standard X
Accelerated _____

Project Name IX Regional GW Project No. 001517.002.032.0SL
Project Location/Event ACC-5 / Mar 2022
Sampler's Name Armando Huerta / Joe Marin
Project Contact Chris Kimmel / Jen Parsons
Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements: _____
Shipment Method: Report
Stored on ice: (Yes) / No

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (SW8260D)-non Picarivol	BETX (SW8260D)	TPH-G (NWTPH-Gx)	Sulfate (E300.0)	Nitrate, Nitrite (300.0)	Nitrate (300.0)	Observations/Comments
Trip Blanks -	5/9/22	-	AQ	6	X	X	X				
MW-21A-220509	5/9/22	1219	AQ	1				X		X	
MW-17A-220509	5/9/22	1257	AQ	4	X			X		X	
MW-19A-220509	5/9/22	1340	AQ	1				X		X	
BDC-103-220509	5/9/22	1451	AQ	6		X	X	X	X		
BDC-DUP1-220509	5/9/22	1453	AQ	6		X	X	X	X		
BDC-102-220509	5/9/22	1540	AQ	6		X	X	X	X		
BDC-104-220509	5/9/22	1615	AQ	6		X	X	X	X		
BDC-101-220509	5/9/22	1626	AQ	6		X	X	X	X		

☐ Allow water samples to settle, collect aliquot from clear portion ☐
☐ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
☐ Dissolved metal samples were field filtered

Other 6 - 48 hr hold for nitrate
8 - VOAs w/ HCl

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Armando Huerta	Printed Name Samuel Murphy	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 5/9/22 Time 1656	Date 5/9/22 Time 1656	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Trip Blanks	22E0159-01	Water	09-May-2022 12:19	09-May-2022 16:56
MW-21A-220509	22E0159-02	Water	09-May-2022 12:19	09-May-2022 16:56
MW-17A-220509	22E0159-03	Water	09-May-2022 12:57	09-May-2022 16:56
MW-18A-220509	22E0159-04	Water	09-May-2022 13:20	09-May-2022 16:56
BDC-103-220509	22E0159-05	Water	09-May-2022 14:51	09-May-2022 16:56
BDC-DUP2-220509	22E0159-06	Water	09-May-2022 14:53	09-May-2022 16:56
BDC-102-220509	22E0159-07	Water	09-May-2022 15:40	09-May-2022 16:56
BDC-104-220509	22E0159-08	Water	09-May-2022 16:15	09-May-2022 16:56
BDC-101-220509	22E0159-09	Water	09-May-2022 16:26	09-May-2022 16:56

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times with the exception of samples 22E0159-05,06 and 09 for nitrate. The samples required dilutions and sample 22E0159-09 for nitrite which injected just outside of the holding time. Samples have been flagged with a "H" qualifier.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on the associated forms.

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 5/10/2022 1:57:16PM

WORK ORDER

22E0159

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH
22E0159-01 A	VOA Vial, Clear, 40 mL, HCL	
22E0159-01 B	VOA Vial, Clear, 40 mL, HCL	
22E0159-01 C	VOA Vial, Clear, 40 mL, HCL	
22E0159-01 D	VOA Vial, Clear, 40 mL, HCL	
22E0159-01 E	VOA Vial, Clear, 40 mL, HCL	
22E0159-01 F	VOA Vial, Clear, 40 mL, HCL	
22E0159-02 A	HDPE NM, 1000 mL	
22E0159-03 A	HDPE NM, 1000 mL	
22E0159-03 B	VOA Vial, Amber, 40 mL	
22E0159-03 C	VOA Vial, Amber, 40 mL	
22E0159-03 D	VOA Vial, Amber, 40 mL	BUBBLE
22E0159-04 A	HDPE NM, 1000 mL	
22E0159-05 A	HDPE NM, 1000 mL	
22E0159-05 B	VOA Vial, Clear, 40 mL, HCL	
22E0159-05 C	VOA Vial, Clear, 40 mL, HCL	
22E0159-05 D	VOA Vial, Clear, 40 mL, HCL	
22E0159-05 E	VOA Vial, Clear, 40 mL, HCL	
22E0159-05 F	VOA Vial, Clear, 40 mL, HCL	
22E0159-06 A	HDPE NM, 1000 mL	
22E0159-06 B	VOA Vial, Clear, 40 mL, HCL	
22E0159-06 C	VOA Vial, Clear, 40 mL, HCL	
22E0159-06 D	VOA Vial, Clear, 40 mL, HCL	
22E0159-06 E	VOA Vial, Clear, 40 mL, HCL	
22E0159-06 F	VOA Vial, Clear, 40 mL, HCL	
22E0159-07 A	HDPE NM, 1000 mL	
22E0159-07 B	VOA Vial, Clear, 40 mL, HCL	
22E0159-07 C	VOA Vial, Clear, 40 mL, HCL	
22E0159-07 D	VOA Vial, Clear, 40 mL, HCL	
22E0159-07 E	VOA Vial, Clear, 40 mL, HCL	
22E0159-07 F	VOA Vial, Clear, 40 mL, HCL	
22E0159-08 A	HDPE NM, 1000 mL	
22E0159-08 B	VOA Vial, Clear, 40 mL, HCL	
22E0159-08 C	VOA Vial, Clear, 40 mL, HCL	
22E0159-08 D	VOA Vial, Clear, 40 mL, HCL	

Reviewed By Date

WORK ORDER

22E0159

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: Boeing Regional GW Developmental Center**

22E0159-08 E	VOA Vial, Clear, 40 mL, HCL
22E0159-08 F	VOA Vial, Clear, 40 mL, HCL
22E0159-09 A	HDPE NM, 1000 mL
22E0159-09 B	VOA Vial, Clear, 40 mL, HCL
22E0159-09 C	VOA Vial, Clear, 40 mL, HCL
22E0159-09 D	VOA Vial, Clear, 40 mL, HCL
22E0159-09 E	VOA Vial, Clear, 40 mL, HCL
22E0159-09 F	VOA Vial, Clear, 40 mL, HCL

Preservation Confirmed By

Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau/Boeing
Project Name: DC regional GW
COC No(s): _____ NA
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Assigned ARI Job No: 22E0159
Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)	4.6 1.8 ___ ___ ___ ___	
Time ____		

If cooler temperature is out of compliance fill out form 00070F
Temp Gun ID#: 90097708

Cooler Accepted by: LB Date: 5/9/22 Time: 16:56

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	5/5/22	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: LB Date: 5/10/22 Time: 13:29 Labels checked by: _____

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

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

Additional Notes, Discrepancies, & Resolutions:

VOC vials w/ air bubbles annotated on pres sheet.

By: LB Date: 5/10/22

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Trip Blanks

22E0159-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:19

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-01 A

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Trip Blanks

22E0159-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:19

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:18

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.8*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Trip Blanks

22E0159-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:19

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:18

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*93.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Trip Blanks

22E0159-01 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/09/2022 12:19
Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-01 A
Preparation Batch: BKE0310 — Sample Size: 10 mL
Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.1*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

MW-21A-220509

22E0159-02 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 12:19

Instrument: IC930 Analyst: BF — Analyzed: 05/10/2022 17:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-02 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	7.84	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

MW-17A-220509

22E0159-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:57

Instrument: NT2 Analyst: LH — Analyzed: 05/11/2022 14:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-03 D

Preparation Batch: BKE0284 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

MW-17A-220509

22E0159-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:57

Instrument: NT2 Analyst: LH — Analyzed: 05/11/2022 14:17

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*104*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

MW-17A-220509

22E0159-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:57

Instrument: NT2 Analyst: LH — Analyzed: 05/11/2022 14:17

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*98.1*	*%*	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

MW-17A-220509

22E0159-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 12:57

Instrument: IC930 Analyst: BF — Analyzed: 05/10/2022 17:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-03 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

MW-18A-220509

22E0159-04 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 13:20

Instrument: IC930 Analyst: BF — Analyzed: 05/10/2022 18:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-04 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	5.82	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-103-220509

22E0159-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:51

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-05 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*89.7*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-103-220509

22E0159-05 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/09/2022 14:51

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-05 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*89.7*	*%*	

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-103-220509

22E0159-05 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 14:51

Instrument: IC930 Analyst: BF — Analyzed: 05/10/2022 18:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-05 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-103-220509

22E0159-05RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 14:51

Instrument: IC930 Analyst: BF — Analyzed: 05/13/2022 00:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-05RE1 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	10	1.00	1.00	49.3	mg/L	H, D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-103-220509

22E0159-05RE3 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 14:51

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 17:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-05RE3 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	50	5.00	5.00	281	mg/L	D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-DUP2-220509

22E0159-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:53

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-06 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.9*	*%*	

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-DUP2-220509

22E0159-06 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/09/2022 14:53

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 10:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-06 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.9*	*%*	

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-DUP2-220509

22E0159-06 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 14:53

Instrument: IC930 Analyst: BF — Analyzed: 05/10/2022 19:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-06 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-DUP2-220509

22E0159-06RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 14:53

Instrument: IC930 Analyst: BF — Analyzed: 05/13/2022 03:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-06RE1 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	10	1.00	1.00	49.0	mg/L	H, D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-DUP2-220509

22E0159-06RE3 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 14:53

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 18:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-06RE3 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	50	5.00	5.00	155	mg/L	D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-102-220509

22E0159-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 15:40

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 11:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-07 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.4*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-102-220509

22E0159-07 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/09/2022 15:40

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 11:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-07 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.4*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-102-220509

22E0159-07 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 15:40

Instrument: IC930 Analyst: BF — Analyzed: 05/10/2022 19:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-07 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-102-220509

22E0159-07RE3 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 15:40

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 18:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-07RE3 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	19.3	mg/L	D

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-104-220509

22E0159-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 16:15

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 11:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-08 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-104-220509

22E0159-08 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/09/2022 16:15

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 11:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-08 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-104-220509

22E0159-08 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 16:15

Instrument: IC930 Analyst: BF — Analyzed: 05/10/2022 20:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-08 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	5.75	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-104-220509

22E0159-08RE3 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 16:15

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 19:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-08RE3 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	29.4	mg/L	D

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-101-220509

22E0159-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 16:26

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 12:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-09 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.1*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-101-220509

22E0159-09 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 05/09/2022 16:26

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 12:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0159-09 B

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-101-220509

22E0159-09RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 16:26

Instrument: IC930 Analyst: BF — Analyzed: 05/11/2022 18:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-09RE1 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	H, U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

BDC-101-220509

22E0159-09RE2 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 16:26

Instrument: IC930 Analyst: BF — Analyzed: 05/11/2022 18:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0159-09RE2 A

Preparation Batch: BKE0253 — Sample Size: 10 mL

Prepared: 05/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	10	1.00	1.00	17.4	mg/L	H, D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	1.00	1.00	56.5	mg/L	D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0284 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0284-BLK1)			Prepared: 11-May-2022 Analyzed: 11-May-2022 12:28							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0284 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0284-BLK1)			Prepared: 11-May-2022 Analyzed: 11-May-2022 12:28							
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	2.00	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0284 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0284-BLK1)				Prepared: 11-May-2022		Analyzed: 11-May-2022 12:28				
Surrogate: 1,2-Dichloroethane-d4	4.42		ug/L	*5.00*		*88.4*	*80-129*			
Surrogate: Toluene-d8	4.78		ug/L	*5.00*		*95.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.59		ug/L	*5.00*		*91.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.90		ug/L	*5.00*		*98.0*	*80-120*			
LCS (BKE0284-BS1)				Prepared: 11-May-2022		Analyzed: 11-May-2022 11:05				
Chloromethane	8.96	0.50	ug/L	10.0		89.6	60-138			
Vinyl Chloride	9.26	0.20	ug/L	10.0		92.6	66-133			
Bromomethane	9.82	1.00	ug/L	10.0		98.2	72-131			
Chloroethane	9.37	0.20	ug/L	10.0		93.7	60-155			
Trichlorofluoromethane	9.85	0.20	ug/L	10.0		98.5	62-141			
Acrolein	45.2	5.00	ug/L	50.0		90.4	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.10	0.20	ug/L	10.0		91.0	76-129			
Acetone	46.7	5.00	ug/L	50.0		93.3	58-142			
1,1-Dichloroethene	9.25	0.20	ug/L	10.0		92.5	69-135			
Iodomethane	9.39	1.00	ug/L	10.0		93.9	56-147			
Methylene Chloride	9.10	1.00	ug/L	10.0		91.0	65-135			
Acrylonitrile	8.94	1.00	ug/L	10.0		89.4	64-134			
Carbon Disulfide	9.56	0.20	ug/L	10.0		95.6	78-125			
trans-1,2-Dichloroethene	9.00	0.20	ug/L	10.0		90.0	78-128			
Vinyl Acetate	8.23	0.20	ug/L	10.0		82.3	55-138			
1,1-Dichloroethane	9.06	0.20	ug/L	10.0		90.6	76-124			
2-Butanone	49.2	5.00	ug/L	50.0		98.4	61-140			
2,2-Dichloropropane	8.62	0.20	ug/L	10.0		86.2	66-147			
cis-1,2-Dichloroethene	9.86	0.20	ug/L	10.0		98.6	80-121			
Chloroform	9.22	0.20	ug/L	10.0		92.2	80-122			
Bromochloromethane	9.48	0.20	ug/L	10.0		94.8	80-121			
1,1,1-Trichloroethane	9.07	0.20	ug/L	10.0		90.7	79-123			
1,1-Dichloropropene	10.8	0.20	ug/L	10.0		108	80-127			
Carbon tetrachloride	9.50	0.20	ug/L	10.0		95.0	53-137			
1,2-Dichloroethane	9.39	0.20	ug/L	10.0		93.9	75-123			
Benzene	10.0	0.20	ug/L	10.0		100	80-120			
Trichloroethene	9.85	0.20	ug/L	10.0		98.5	80-120			
1,2-Dichloropropane	9.75	0.20	ug/L	10.0		97.5	80-120			
Bromodichloromethane	9.07	0.20	ug/L	10.0		90.7	80-121			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0284 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0284-BS1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 11:05						
Dibromomethane	9.19	0.20	ug/L	10.0		91.9	80-120			
4-Methyl-2-Pentanone	45.8	5.00	ug/L	50.0		91.5	67-133			
cis-1,3-Dichloropropene	8.91	0.20	ug/L	10.0		89.1	80-124			
Toluene	9.89	0.20	ug/L	10.0		98.9	80-120			
trans-1,3-Dichloropropene	8.40	0.20	ug/L	10.0		84.0	71-127			
2-Hexanone	49.0	5.00	ug/L	50.0		98.0	69-133			
1,1,2-Trichloroethane	9.69	0.20	ug/L	10.0		96.9	80-121			
1,3-Dichloropropane	10.2	0.20	ug/L	10.0		102	80-120			
Tetrachloroethene	9.26	0.20	ug/L	10.0		92.6	80-120			
Dibromochloromethane	10.6	0.20	ug/L	10.0		106	65-135			
1,2-Dibromoethane	10.3	0.20	ug/L	10.0		103	80-121			
Chlorobenzene	9.60	0.20	ug/L	10.0		96.0	80-120			
Ethylbenzene	9.90	0.20	ug/L	10.0		99.0	80-120			
1,1,1,2-Tetrachloroethane	9.87	0.20	ug/L	10.0		98.7	80-120			
m,p-Xylene	19.9	0.40	ug/L	20.0		99.7	80-121			
o-Xylene	8.96	0.20	ug/L	10.0		89.6	80-121			
Styrene	8.50	0.20	ug/L	10.0		85.0	80-124			
Bromoform	10.1	0.20	ug/L	10.0		101	51-134			
1,1,2,2-Tetrachloroethane	11.1	0.20	ug/L	10.0		111	77-123			
1,2,3-Trichloropropane	10.2	0.50	ug/L	10.0		102	76-125			
trans-1,4-Dichloro 2-Butene	9.29	1.00	ug/L	10.0		92.9	55-129			
n-Propylbenzene	10.6	0.20	ug/L	10.0		106	78-130			
Bromobenzene	9.95	0.20	ug/L	10.0		99.5	80-120			
Isopropyl Benzene	11.1	0.20	ug/L	10.0		111	80-128			
2-Chlorotoluene	10.4	0.20	ug/L	10.0		104	78-122			
4-Chlorotoluene	10.9	0.20	ug/L	10.0		109	80-121			
t-Butylbenzene	10.7	0.20	ug/L	10.0		107	78-125			
1,3,5-Trimethylbenzene	10.8	0.20	ug/L	10.0		108	80-129			
1,2,4-Trimethylbenzene	10.8	0.20	ug/L	10.0		108	80-127			
s-Butylbenzene	10.5	0.20	ug/L	10.0		105	78-129			
4-Isopropyl Toluene	10.9	0.20	ug/L	10.0		109	79-130			
1,3-Dichlorobenzene	9.93	0.20	ug/L	10.0		99.3	80-120			
1,4-Dichlorobenzene	9.05	0.20	ug/L	10.0		90.5	80-120			
n-Butylbenzene	10.3	0.20	ug/L	10.0		103	74-129			
1,2-Dichlorobenzene	9.61	0.20	ug/L	10.0		96.1	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0284 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0284-BS1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 11:05						
1,2-Dibromo-3-chloropropane	11.0	0.50	ug/L	10.0		110	62-123			
1,2,4-Trichlorobenzene	8.45	0.50	ug/L	10.0		84.5	64-124			
Hexachloro-1,3-Butadiene	9.55	2.00	ug/L	10.0		95.5	58-123			
Naphthalene	8.19	0.50	ug/L	10.0		81.9	50-134			
1,2,3-Trichlorobenzene	8.78	0.50	ug/L	10.0		87.8	49-133			
Surrogate: 1,2-Dichloroethane-d4	4.73		ug/L	*5.00*		*94.6*	*80-129*			
Surrogate: Toluene-d8	5.10		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.31		ug/L	*5.00*		*106*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.1*	*80-120*			
LCS Dup (BKE0284-BSD1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 11:47						
Chloromethane	9.22	0.50	ug/L	10.0		92.2	60-138	2.76	30	
Vinyl Chloride	9.42	0.20	ug/L	10.0		94.2	66-133	1.81	30	
Bromomethane	9.71	1.00	ug/L	10.0		97.1	72-131	1.14	30	
Chloroethane	9.25	0.20	ug/L	10.0		92.5	60-155	1.25	30	
Trichlorofluoromethane	9.43	0.20	ug/L	10.0		94.3	62-141	4.38	30	
Acrolein	45.3	5.00	ug/L	50.0		90.6	52-190	0.20	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.68	0.20	ug/L	10.0		86.8	76-129	4.71	30	
Acetone	47.4	5.00	ug/L	50.0		94.8	58-142	1.56	30	
1,1-Dichloroethene	9.09	0.20	ug/L	10.0		90.9	69-135	1.69	30	
Iodomethane	9.10	1.00	ug/L	10.0		91.0	56-147	3.09	30	
Methylene Chloride	9.08	1.00	ug/L	10.0		90.8	65-135	0.31	30	
Acrylonitrile	9.62	1.00	ug/L	10.0		96.2	64-134	7.32	30	
Carbon Disulfide	9.27	0.20	ug/L	10.0		92.7	78-125	3.01	30	
trans-1,2-Dichloroethene	8.99	0.20	ug/L	10.0		89.9	78-128	0.20	30	
Vinyl Acetate	8.44	0.20	ug/L	10.0		84.4	55-138	2.54	30	
1,1-Dichloroethane	9.20	0.20	ug/L	10.0		92.0	76-124	1.62	30	
2-Butanone	49.1	5.00	ug/L	50.0		98.2	61-140	0.28	30	
2,2-Dichloropropane	8.41	0.20	ug/L	10.0		84.1	66-147	2.53	30	
cis-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100	80-121	1.71	30	
Chloroform	9.13	0.20	ug/L	10.0		91.3	80-122	0.96	30	
Bromochloromethane	9.65	0.20	ug/L	10.0		96.5	80-121	1.71	30	
1,1,1-Trichloroethane	9.09	0.20	ug/L	10.0		90.9	79-123	0.26	30	
1,1-Dichloropropene	10.5	0.20	ug/L	10.0		105	80-127	2.51	30	
Carbon tetrachloride	8.79	0.20	ug/L	10.0		87.9	53-137	7.75	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0284 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0284-BSD1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 11:47						
1,2-Dichloroethane	9.29	0.20	ug/L	10.0		92.9	75-123	1.11	30	
Benzene	9.80	0.20	ug/L	10.0		98.0	80-120	2.51	30	
Trichloroethene	9.68	0.20	ug/L	10.0		96.8	80-120	1.79	30	
1,2-Dichloropropane	9.54	0.20	ug/L	10.0		95.4	80-120	2.16	30	
Bromodichloromethane	8.99	0.20	ug/L	10.0		89.9	80-121	0.97	30	
Dibromomethane	9.38	0.20	ug/L	10.0		93.8	80-120	1.99	30	
4-Methyl-2-Pentanone	44.2	5.00	ug/L	50.0		88.4	67-133	3.43	30	
cis-1,3-Dichloropropene	8.81	0.20	ug/L	10.0		88.1	80-124	1.10	30	
Toluene	9.53	0.20	ug/L	10.0		95.3	80-120	3.64	30	
trans-1,3-Dichloropropene	8.19	0.20	ug/L	10.0		81.9	71-127	2.56	30	
2-Hexanone	51.2	5.00	ug/L	50.0		102	69-133	4.41	30	
1,1,2-Trichloroethane	9.51	0.20	ug/L	10.0		95.1	80-121	1.88	30	
1,3-Dichloropropane	10.2	0.20	ug/L	10.0		102	80-120	0.44	30	
Tetrachloroethene	9.21	0.20	ug/L	10.0		92.1	80-120	0.49	30	
Dibromochloromethane	10.4	0.20	ug/L	10.0		104	65-135	2.04	30	
1,2-Dibromoethane	9.83	0.20	ug/L	10.0		98.3	80-121	4.66	30	
Chlorobenzene	9.58	0.20	ug/L	10.0		95.8	80-120	0.18	30	
Ethylbenzene	9.82	0.20	ug/L	10.0		98.2	80-120	0.81	30	
1,1,1,2-Tetrachloroethane	9.91	0.20	ug/L	10.0		99.1	80-120	0.39	30	
m,p-Xylene	19.9	0.40	ug/L	20.0		99.4	80-121	0.29	30	
o-Xylene	9.05	0.20	ug/L	10.0		90.5	80-121	1.02	30	
Styrene	9.21	0.20	ug/L	10.0		92.1	80-124	7.95	30	
Bromoform	10.1	0.20	ug/L	10.0		101	51-134	0.48	30	
1,1,2,2-Tetrachloroethane	10.6	0.20	ug/L	10.0		106	77-123	4.03	30	
1,2,3-Trichloropropane	9.63	0.50	ug/L	10.0		96.3	76-125	5.73	30	
trans-1,4-Dichloro 2-Butene	9.37	1.00	ug/L	10.0		93.7	55-129	0.80	30	
n-Propylbenzene	10.3	0.20	ug/L	10.0		103	78-130	2.89	30	
Bromobenzene	9.61	0.20	ug/L	10.0		96.1	80-120	3.50	30	
Isopropyl Benzene	10.8	0.20	ug/L	10.0		108	80-128	3.09	30	
2-Chlorotoluene	10.5	0.20	ug/L	10.0		105	78-122	0.29	30	
4-Chlorotoluene	10.3	0.20	ug/L	10.0		103	80-121	5.54	30	
t-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-125	1.47	30	
1,3,5-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-129	2.50	30	
1,2,4-Trimethylbenzene	10.7	0.20	ug/L	10.0		107	80-127	1.46	30	
s-Butylbenzene	9.98	0.20	ug/L	10.0		99.8	78-129	4.66	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0284 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0284-BSD1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 11:47						
4-Isopropyl Toluene	10.5	0.20	ug/L	10.0		105	79-130	3.45	30	
1,3-Dichlorobenzene	9.62	0.20	ug/L	10.0		96.2	80-120	3.14	30	
1,4-Dichlorobenzene	8.85	0.20	ug/L	10.0		88.5	80-120	2.19	30	
n-Butylbenzene	9.82	0.20	ug/L	10.0		98.2	74-129	5.09	30	
1,2-Dichlorobenzene	9.18	0.20	ug/L	10.0		91.8	80-120	4.60	30	
1,2-Dibromo-3-chloropropane	10.6	0.50	ug/L	10.0		106	62-123	3.57	30	
1,2,4-Trichlorobenzene	8.24	0.50	ug/L	10.0		82.4	64-124	2.42	30	
Hexachloro-1,3-Butadiene	8.49	2.00	ug/L	10.0		84.9	58-123	11.80	30	
Naphthalene	8.06	0.50	ug/L	10.0		80.6	50-134	1.59	30	
1,2,3-Trichlorobenzene	8.51	0.50	ug/L	10.0		85.1	49-133	3.16	30	
Surrogate: 1,2-Dichloroethane-d4	4.63		ug/L	*5.00*		*92.6*	*80-129*			
Surrogate: Toluene-d8	4.96		ug/L	*5.00*		*99.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.43		ug/L	*5.00*		*109*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.88		ug/L	*5.00*		*97.6*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0310-BLK1)			Prepared: 12-May-2022 Analyzed: 12-May-2022 09:36							
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.73		ug/L	*5.00*		*94.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.61		ug/L	*5.00*		*92.3*	*80-120*			
Blank (BKE0310-BLK2)			Prepared: 12-May-2022 Analyzed: 12-May-2022 09:36							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0310-BLK2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 09:36						
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0310-BLK2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 09:36						
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	2.00	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.26		ug/L	*5.00*		*105*	*80-129*			
Surrogate: Toluene-d8	4.73		ug/L	*5.00*		*94.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.61		ug/L	*5.00*		*92.3*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.05		ug/L	*5.00*		*101*	*80-120*			
LCS (BKE0310-BS1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 07:54						
Gasoline Range Organics (Tol-Nap)	955	100	ug/L	1000		95.5	72-128			
Surrogate: Toluene-d8	5.11		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.36		ug/L	*5.00*		*107*	*80-120*			
LCS (BKE0310-BS2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:14						
Chloromethane	9.47	0.50	ug/L	10.0		94.7	60-138			
Vinyl Chloride	9.53	0.20	ug/L	10.0		95.3	66-133			
Bromomethane	9.76	1.00	ug/L	10.0		97.6	72-131			
Chloroethane	9.68	0.20	ug/L	10.0		96.8	60-155			
Trichlorofluoromethane	10.8	0.20	ug/L	10.0		108	62-141			
Acrolein	44.6	5.00	ug/L	50.0		89.2	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.00	0.20	ug/L	10.0		90.0	76-129			
Acetone	48.8	5.00	ug/L	50.0		97.5	58-142			
1,1-Dichloroethene	9.27	0.20	ug/L	10.0		92.7	69-135			
Iodomethane	9.43	1.00	ug/L	10.0		94.3	56-147			
Methylene Chloride	9.51	1.00	ug/L	10.0		95.1	65-135			
Acrylonitrile	9.32	1.00	ug/L	10.0		93.2	64-134			
Carbon Disulfide	9.32	0.20	ug/L	10.0		93.2	78-125			
trans-1,2-Dichloroethene	9.31	0.20	ug/L	10.0		93.1	78-128			
Vinyl Acetate	8.54	0.20	ug/L	10.0		85.4	55-138			
1,1-Dichloroethane	9.36	0.20	ug/L	10.0		93.6	76-124			
2-Butanone	48.8	5.00	ug/L	50.0		97.6	61-140			
2,2-Dichloropropane	9.46	0.20	ug/L	10.0		94.6	66-147			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0310-BS2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:14						
cis-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100	80-121			
Chloroform	9.44	0.20	ug/L	10.0		94.4	80-122			
Bromochloromethane	9.48	0.20	ug/L	10.0		94.8	80-121			
1,1,1-Trichloroethane	9.46	0.20	ug/L	10.0		94.6	79-123			
1,1-Dichloropropene	10.4	0.20	ug/L	10.0		104	80-127			
Carbon tetrachloride	9.53	0.20	ug/L	10.0		95.3	53-137			
1,2-Dichloroethane	9.75	0.20	ug/L	10.0		97.5	75-123			
Benzene	10.2	0.20	ug/L	10.0		102	80-120			
Trichloroethene	9.71	0.20	ug/L	10.0		97.1	80-120			
1,2-Dichloropropane	9.90	0.20	ug/L	10.0		99.0	80-120			
Bromodichloromethane	9.30	0.20	ug/L	10.0		93.0	80-121			
Dibromomethane	9.54	0.20	ug/L	10.0		95.4	80-120			
4-Methyl-2-Pentanone	45.4	5.00	ug/L	50.0		90.8	67-133			
cis-1,3-Dichloropropene	9.12	0.20	ug/L	10.0		91.2	80-124			
Toluene	9.63	0.20	ug/L	10.0		96.3	80-120			
trans-1,3-Dichloropropene	8.32	0.20	ug/L	10.0		83.2	71-127			
2-Hexanone	49.9	5.00	ug/L	50.0		99.7	69-133			
1,1,2-Trichloroethane	9.79	0.20	ug/L	10.0		97.9	80-121			
1,3-Dichloropropane	10.5	0.20	ug/L	10.0		105	80-120			
Tetrachloroethene	9.67	0.20	ug/L	10.0		96.7	80-120			
Dibromochloromethane	10.7	0.20	ug/L	10.0		107	65-135			
1,2-Dibromoethane	10.1	0.20	ug/L	10.0		101	80-121			
Chlorobenzene	9.75	0.20	ug/L	10.0		97.5	80-120			
Ethylbenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,1,1,2-Tetrachloroethane	9.81	0.20	ug/L	10.0		98.1	80-120			
m,p-Xylene	20.6	0.40	ug/L	20.0		103	80-121			
o-Xylene	9.31	0.20	ug/L	10.0		93.1	80-121			
Xylenes, total	30.0	0.60	ug/L	30.0		99.9	76-127			
Styrene	9.44	0.20	ug/L	10.0		94.4	80-124			
Bromoform	9.86	0.20	ug/L	10.0		98.6	51-134			
1,1,2,2-Tetrachloroethane	10.7	0.20	ug/L	10.0		107	77-123			
1,2,3-Trichloropropane	10.0	0.50	ug/L	10.0		100	76-125			
trans-1,4-Dichloro 2-Butene	8.48	1.00	ug/L	10.0		84.8	55-129			
n-Propylbenzene	10.6	0.20	ug/L	10.0		106	78-130			
Bromobenzene	9.79	0.20	ug/L	10.0		97.9	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0310-BS2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:14						
Isopropyl Benzene	11.1	0.20	ug/L	10.0		111	80-128			
2-Chlorotoluene	10.4	0.20	ug/L	10.0		104	78-122			
4-Chlorotoluene	10.6	0.20	ug/L	10.0		106	80-121			
t-Butylbenzene	10.9	0.20	ug/L	10.0		109	78-125			
1,3,5-Trimethylbenzene	10.9	0.20	ug/L	10.0		109	80-129			
1,2,4-Trimethylbenzene	11.2	0.20	ug/L	10.0		112	80-127			
s-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-129			
4-Isopropyl Toluene	11.1	0.20	ug/L	10.0		111	79-130			
1,3-Dichlorobenzene	9.90	0.20	ug/L	10.0		99.0	80-120			
1,4-Dichlorobenzene	9.21	0.20	ug/L	10.0		92.1	80-120			
n-Butylbenzene	10.6	0.20	ug/L	10.0		106	74-129			
1,2-Dichlorobenzene	9.41	0.20	ug/L	10.0		94.1	80-120			
1,2-Dibromo-3-chloropropane	10.6	0.50	ug/L	10.0		106	62-123			
1,2,4-Trichlorobenzene	8.67	0.50	ug/L	10.0		86.7	64-124			
Hexachloro-1,3-Butadiene	9.26	2.00	ug/L	10.0		92.6	58-123			
Naphthalene	8.26	0.50	ug/L	10.0		82.6	50-134			
1,2,3-Trichlorobenzene	9.07	0.50	ug/L	10.0		90.7	49-133			
Surrogate: 1,2-Dichloroethane-d4	4.97		ug/L	*5.00*		*99.4*	*80-129*			
Surrogate: Toluene-d8	5.04		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.27		ug/L	*5.00*		*105*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.95		ug/L	*5.00*		*99.0*	*80-120*			
LCS Dup (BKE0310-BSD1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:34						
Gasoline Range Organics (Tol-Nap)	977	100	ug/L	1000		97.7	72-128	2.36	30	
Surrogate: Toluene-d8	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.15		ug/L	*5.00*		*103*	*80-120*			
LCS Dup (BKE0310-BSD2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:55						
Chloromethane	9.09	0.50	ug/L	10.0		90.9	60-138	4.07	30	
Vinyl Chloride	9.43	0.20	ug/L	10.0		94.3	66-133	1.06	30	
Bromomethane	9.92	1.00	ug/L	10.0		99.2	72-131	1.59	30	
Chloroethane	9.77	0.20	ug/L	10.0		97.7	60-155	0.92	30	
Trichlorofluoromethane	9.79	0.20	ug/L	10.0		97.9	62-141	10.10	30	
Acrolein	45.6	5.00	ug/L	50.0		91.2	52-190	2.27	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0310-BSD2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:55						
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.98	0.20	ug/L	10.0		89.8	76-129	0.21	30	
Acetone	48.2	5.00	ug/L	50.0		96.4	58-142	1.20	30	
1,1-Dichloroethene	9.46	0.20	ug/L	10.0		94.6	69-135	1.97	30	
Iodomethane	9.39	1.00	ug/L	10.0		93.9	56-147	0.47	30	
Methylene Chloride	9.27	1.00	ug/L	10.0		92.7	65-135	2.54	30	
Acrylonitrile	9.33	1.00	ug/L	10.0		93.3	64-134	0.10	30	
Carbon Disulfide	9.46	0.20	ug/L	10.0		94.6	78-125	1.48	30	
trans-1,2-Dichloroethene	9.08	0.20	ug/L	10.0		90.8	78-128	2.48	30	
Vinyl Acetate	8.25	0.20	ug/L	10.0		82.5	55-138	3.37	30	
1,1-Dichloroethane	9.24	0.20	ug/L	10.0		92.4	76-124	1.35	30	
2-Butanone	48.2	5.00	ug/L	50.0		96.4	61-140	1.17	30	
2,2-Dichloropropane	9.04	0.20	ug/L	10.0		90.4	66-147	4.47	30	
cis-1,2-Dichloroethene	9.95	0.20	ug/L	10.0		99.5	80-121	0.88	30	
Chloroform	9.22	0.20	ug/L	10.0		92.2	80-122	2.37	30	
Bromochloromethane	9.54	0.20	ug/L	10.0		95.4	80-121	0.66	30	
1,1,1-Trichloroethane	9.26	0.20	ug/L	10.0		92.6	79-123	2.20	30	
1,1-Dichloropropene	10.6	0.20	ug/L	10.0		106	80-127	1.57	30	
Carbon tetrachloride	9.34	0.20	ug/L	10.0		93.4	53-137	2.02	30	
1,2-Dichloroethane	9.44	0.20	ug/L	10.0		94.4	75-123	3.28	30	
Benzene	10.0	0.20	ug/L	10.0		100	80-120	1.21	30	
Trichloroethene	10.1	0.20	ug/L	10.0		101	80-120	3.74	30	
1,2-Dichloropropane	9.82	0.20	ug/L	10.0		98.2	80-120	0.74	30	
Bromodichloromethane	9.26	0.20	ug/L	10.0		92.6	80-121	0.37	30	
Dibromomethane	9.77	0.20	ug/L	10.0		97.7	80-120	2.39	30	
4-Methyl-2-Pentanone	46.8	5.00	ug/L	50.0		93.7	67-133	3.10	30	
cis-1,3-Dichloropropene	9.11	0.20	ug/L	10.0		91.1	80-124	0.02	30	
Toluene	9.79	0.20	ug/L	10.0		97.9	80-120	1.68	30	
trans-1,3-Dichloropropene	8.29	0.20	ug/L	10.0		82.9	71-127	0.29	30	
2-Hexanone	52.0	5.00	ug/L	50.0		104	69-133	4.25	30	
1,1,2-Trichloroethane	9.87	0.20	ug/L	10.0		98.7	80-121	0.85	30	
1,3-Dichloropropane	10.1	0.20	ug/L	10.0		101	80-120	3.80	30	
Tetrachloroethene	9.48	0.20	ug/L	10.0		94.8	80-120	2.07	30	
Dibromochloromethane	10.3	0.20	ug/L	10.0		103	65-135	3.10	30	
1,2-Dibromoethane	10.5	0.20	ug/L	10.0		105	80-121	4.10	30	
Chlorobenzene	9.68	0.20	ug/L	10.0		96.8	80-120	0.78	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0310-BSD2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:55						
Ethylbenzene	10.1	0.20	ug/L	10.0		101	80-120	0.30	30	
1,1,1,2-Tetrachloroethane	9.79	0.20	ug/L	10.0		97.9	80-120	0.22	30	
m,p-Xylene	20.0	0.40	ug/L	20.0		100	80-121	3.14	30	
o-Xylene	9.22	0.20	ug/L	10.0		92.2	80-121	1.07	30	
Xylenes, total	29.2	0.60	ug/L	30.0		97.4	76-127	2.50	30	
Styrene	9.54	0.20	ug/L	10.0		95.4	80-124	1.04	30	
Bromoform	10.1	0.20	ug/L	10.0		101	51-134	2.57	30	
1,1,2,2-Tetrachloroethane	11.3	0.20	ug/L	10.0		113	77-123	5.87	30	
1,2,3-Trichloropropane	10.2	0.50	ug/L	10.0		102	76-125	1.64	30	
trans-1,4-Dichloro 2-Butene	9.08	1.00	ug/L	10.0		90.8	55-129	6.81	30	
n-Propylbenzene	10.7	0.20	ug/L	10.0		107	78-130	1.45	30	
Bromobenzene	9.97	0.20	ug/L	10.0		99.7	80-120	1.82	30	
Isopropyl Benzene	11.3	0.20	ug/L	10.0		113	80-128	1.63	30	
2-Chlorotoluene	10.5	0.20	ug/L	10.0		105	78-122	0.82	30	
4-Chlorotoluene	10.5	0.20	ug/L	10.0		105	80-121	0.64	30	
t-Butylbenzene	11.1	0.20	ug/L	10.0		111	78-125	1.42	30	
1,3,5-Trimethylbenzene	11.2	0.20	ug/L	10.0		112	80-129	2.26	30	
1,2,4-Trimethylbenzene	11.2	0.20	ug/L	10.0		112	80-127	0.05	30	
s-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-129	0.22	30	
4-Isopropyl Toluene	11.1	0.20	ug/L	10.0		111	79-130	0.59	30	
1,3-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120	3.01	30	
1,4-Dichlorobenzene	9.01	0.20	ug/L	10.0		90.1	80-120	2.18	30	
n-Butylbenzene	10.5	0.20	ug/L	10.0		105	74-129	0.99	30	
1,2-Dichlorobenzene	9.71	0.20	ug/L	10.0		97.1	80-120	3.09	30	
1,2-Dibromo-3-chloropropane	11.3	0.50	ug/L	10.0		113	62-123	6.01	30	
1,2,4-Trichlorobenzene	8.86	0.50	ug/L	10.0		88.6	64-124	2.24	30	
Hexachloro-1,3-Butadiene	8.92	2.00	ug/L	10.0		89.2	58-123	3.75	30	
Naphthalene	8.54	0.50	ug/L	10.0		85.4	50-134	3.40	30	
1,2,3-Trichlorobenzene	9.06	0.50	ug/L	10.0		90.6	49-133	0.19	30	
Surrogate: 1,2-Dichloroethane-d4	4.73		ug/L	*5.00*		*94.7*	*80-129*			
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.21		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKE0253 - No Prep Wet Chem

Instrument: IC930 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0253-BLK1)				Prepared: 10-May-2022 Analyzed: 10-May-2022 16:19							
Nitrate-N	ND	0.100	0.100	mg/L							U
Nitrite-N	ND	0.100	0.100	mg/L							U
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKE0253-BS1)				Prepared: 10-May-2022 Analyzed: 10-May-2022 17:19							
Nitrate-N	5.18	0.100	0.100	mg/L	5.00		104	90-110			
Nitrite-N	5.13	0.100	0.100	mg/L	5.00		103	90-110			
Sulfate	5.20	0.100	0.100	mg/L	5.00		104	90-110			
Duplicate (BKE0253-DUP1)		**Source: 22E0159-05**		Prepared: 10-May-2022 Analyzed: 10-May-2022 18:59							
Nitrite-N	ND	0.100	0.100	mg/L		ND					U
Duplicate (BKE0253-DUP2)		**Source: 22E0159-05RE1**		Prepared: 10-May-2022 Analyzed: 13-May-2022 00:21							
Nitrate-N	49.3	1.00	1.00	mg/L		49.3			0.04	20	H, D
Duplicate (BKE0253-DUP4)		**Source: 22E0159-05RE3**		Prepared: 10-May-2022 Analyzed: 31-May-2022 17:41							
Sulfate	196	5.00	5.00	mg/L		281			35.80	20	*, D
Matrix Spike (BKE0253-MS1)		**Source: 22E0159-05**		Prepared: 10-May-2022 Analyzed: 10-May-2022 19:19							
Nitrite-N	1.86	0.100	0.100	mg/L	2.04	ND	91.2	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike (BKE0253-MS2)		**Source: 22E0159-05RE1**		Prepared: 10-May-2022 Analyzed: 13-May-2022 01:41							
Nitrate-N	96.4	2.00	2.00	mg/L	50.0	49.3	94.2	75-125			H, D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike (BKE0253-MS4)		**Source: 22E0159-05RE3**		Prepared: 10-May-2022 Analyzed: 31-May-2022 18:01							
Sulfate	374	5.00	5.00	mg/L	201	281	46.0	75-125			*, D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	09-Jun-2022 10:15

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

21 November 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (025217.099.069)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0148	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

LANDAU ASSOCIATES

22K0148

Chain-of-Custody Record

☐ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☒ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 11/7/22
Page 1 of 1

Turnaround Time: Standard / Accelerated

Project Name DC Regional GW Project No. 025217.099.069
Project Location/Event AOC-5 Area / November 2022
Sampler's Name Samantha Lindstrom, Josh Burbach
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com
paul.m.morin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements: _____
Shipment Method: _____
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	BTEX (8260D)	TPH-G (NWTPH-G)	Sulfate (E300.0)	Nitrate Nitrite (300.0)	Observations/Comments
BDC-101-221107	11/7/22	1502	AQ	6	X	X	X	X	
BDC-102-221107	11/7/22	1528	Aq	6	X	X	X	X	
BDC-104-221107	11/7/22	1616	Aq	6	X	X	X	X	
Trip blank	—	—	Aq	2	X	X			

Testing Parameters

Observations/Comments

___ Allow water samples to settle, collect aliquot from clear portion ☐

___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

___ Dissolved metal samples were field filtered

Other _____

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Josh Burbach	Printed Name Rowan Miller	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 11/7/22 Time 1633	Date 11/7/22 Time 1633	Date Time	Date Time

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

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-101-221107	22K0148-01	Water	07-Nov-2022 15:02	07-Nov-2022 16:33
BDC-102-221107	22K0148-02	Water	07-Nov-2022 15:28	07-Nov-2022 16:33
BDC-104-221107	22K0148-03	Water	07-Nov-2022 16:16	07-Nov-2022 16:33
Trip Blank	22K0148-04	Water	07-Nov-2022 15:02	07-Nov-2022 16:33

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Work Order Case Narrative

Gasoline by NWTPH-g (GC/MS)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: DC Gun Regional

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Assigned ARI Job No: 22K0148

Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4.0°

Time 1633

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 9708

Cooler Accepted by: _____ Date: 11/7/22 Time: 1633

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	11/7/22	

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: [signature] Date: 11/7/22 Time: 9:46 Labels checked by: [signature]

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-101-221107

22K0148-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 15:02

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 10:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-01 C

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*93.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-101-221107

22K0148-01 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/07/2022 15:02

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 10:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-01 C

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*93.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-101-221107

22K0148-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 15:02

Instrument: IC930 Analyst: KLD — Analyzed: 11/08/2022 21:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0148-01 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	9.21	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-101-221107

22K0148-01RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 15:02

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 06:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0148-01RE1 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	1.00	1.00	28.0	mg/L	D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-102-221107

22K0148-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 15:28

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 10:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-02 E

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-102-221107

22K0148-02 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/07/2022 15:28

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 10:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-02 E

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-102-221107

22K0148-02 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 15:28

Instrument: IC930 Analyst: KLD — Analyzed: 11/08/2022 22:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0148-02 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	0.526	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-102-221107

22K0148-02RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 15:28

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 07:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0148-02RE1 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	1.00	1.00	21.4	mg/L	D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-104-221107

22K0148-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 16:16

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 11:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-03 F

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-104-221107

22K0148-03 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/07/2022 16:16

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 11:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-03 F

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*95.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-104-221107

22K0148-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 16:16

Instrument: IC930 Analyst: KLD — Analyzed: 11/08/2022 23:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0148-03 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	3.64	mg/L	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

BDC-104-221107

22K0148-03RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 16:16

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 08:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0148-03RE1 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	1.00	1.00	21.9	mg/L	D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Trip Blank

22K0148-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 15:02
Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 08:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-04 A
Preparation Batch: BKK0260 — Sample Size: 10 mL
Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.8*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Trip Blank

22K0148-04 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/07/2022 15:02
Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 08:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0148-04 A
Preparation Batch: BKK0260 — Sample Size: 10 mL
Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.8*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - NWTPHg

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.73		ug/L	*5.00*		*94.7*	*80-120*			
Blank (BKK0260-BLK2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39						
Benzene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Surrogate: Toluene-d8	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.73		ug/L	*5.00*		*94.7*	*80-120*			
LCS (BKK0260-BS1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 06:56						
Gasoline Range Organics (Tol-Nap)	1110	100	ug/L	1000		111	72-128			
Surrogate: Toluene-d8	4.83		ug/L	*5.00*		*96.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.76		ug/L	*5.00*		*95.2*	*80-120*			
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
Benzene	11.0	0.20	ug/L	10.0		110	80-120			
Toluene	10.9	0.20	ug/L	10.0		109	80-120			
Ethylbenzene	10.9	0.20	ug/L	10.0		109	80-120			
m,p-Xylene	22.4	0.40	ug/L	20.0		112	80-121			
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121			
Xylenes, total	33.4	0.60	ug/L	30.0		111	76-127			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.79		ug/L	*5.00*		*95.7*	*80-120*			
LCS Dup (BKK0260-BSD1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:37						
Gasoline Range Organics (Tol-Nap)	1110	100	ug/L	1000		111	72-128	0.03	30	
Surrogate: Toluene-d8	4.90		ug/L	*5.00*		*98.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.96		ug/L	*5.00*		*99.1*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
Benzene	11.3	0.20	ug/L	10.0		113	80-120	2.79	30	
Toluene	11.2	0.20	ug/L	10.0		112	80-120	2.18	30	
Ethylbenzene	11.3	0.20	ug/L	10.0		113	80-120	3.70	30	
m,p-Xylene	23.0	0.40	ug/L	20.0		115	80-121	2.49	30	
o-Xylene	11.2	0.20	ug/L	10.0		112	80-121	1.59	30	
Xylenes, total	34.1	0.60	ug/L	30.0		114	76-127	2.20	30	
Surrogate: Toluene-d8	4.89		ug/L	*5.00*		*97.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.85		ug/L	*5.00*		*96.9*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0256 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0256-BLK1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:37							
Nitrate-N	ND	0.100	0.100	mg/L							U
Nitrite-N	ND	0.100	0.100	mg/L							U
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0256-BS1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:57							
Nitrate-N	5.37	0.100	0.100	mg/L	5.00		107	90-110			
Nitrite-N	5.03	0.100	0.100	mg/L	5.00		101	90-110			
Sulfate	5.29	0.100	0.100	mg/L	5.00		106	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.099.069	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:13

Notes and Definitions

D	The reported value is from a dilution
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

21 November 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0178	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

AR:22K0178

Landau Associates Chain-of-Custody Record

☐ North Seattle (206) 631-8660	☐ Spokane (509) 327-9737	Date 11/8/22	Turnaround Time:
☒ Tacoma (253) 926-2493	☐ Portland (503) 542-1080	Page 1 of 1	Standard ✓
☐ Olympia (360) 791-3178	☐ _____		Accelerated _____

Project Name: DC Regional GW Project No.: 025217.002.032

Project Location/Event: AOC-5 / November 2022

Sampler's Name: Samantha Lindstrom

Project Contact: Chris Kimmel, Jen Parsons

Send Results To: Chris Kimmel, Jen Parsons, data@landauinc.com, paul.m.morin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements: _____

Shipment Method: dropoff

Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (8260D) *	BTEX (8260D)	TPH-G (NWTPH-G) +	Sulfate (E300.0)	Nitrate/Nitrite (300.0)	Nitrate (300.0)	Observations/Comments
MW-21A-221108	11/8/22	1144	AQ	1				X		X	
MW-18A-221108	11/8/22	1212	AQ	1				X		X	
MW-17A-221108	11/8/22	1238	AQ	4	X			X		X	
Tripblanks-221108	—	—	AQ	2+ SSL	X	X	X				

Testing Parameters

___ Allow water samples to settle, collect aliquot from clear portion ☐

___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

___ Dissolved metal samples were field filtered

Other: * non-preserved (7-day)
+ VOAs preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature: Samantha Lindstrom	Signature:	Signature:	Signature:
Printed Name: Samantha Lindstrom	Printed Name: Jacob Hall	Printed Name:	Printed Name:
Company: Landau Associates	Company: AQ, LLC	Company:	Company:
Date: 11/8/22 Time: 1434	Date: 11/8/22 Time: 1434	Date: Time:	Date: Time:

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative 10/2018

AR:22K0178

Landau Associates Chain-of-Custody Record

☐ North Seattle (206) 631-8660	☐ Spokane (509) 327-9737	Date 11/8/22	Turnaround Time:
☒ Tacoma (253) 926-2493	☐ Portland (503) 542-1080	Page 1 of 1	(Standard) / Accelerated
☐ Olympia (360) 791-3178	☐		

Project Name DC Regional GW Project No. 025217.002.032

Project Location/Event AOC-5 / November 2022

Sampler's Name Samantha Lindstrom

Project Contact Chris Kimmel, Jen Parsons

Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com
paul.m.morin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements:

Shipment Method dropoff

Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (8260D) *	BTEX (8260D)	TPH-G (NWTPH-G)	Sulfate (E300.0)	Nitrate/Nitrite (300.0)	Nitrate (300.0)	Observations/Comments
MW-21A-221108	11/8/22	1144	AQ	1				X		X	
MW-18A-221108	11/8/22	1212	AQ	1				X		X	
MW-17A-221108	11/8/22	1238	AQ	4	X			X		X	
Tripblanks-221108	—	—	AQ	2+4 SSL	X	X	X				

Cancel TPH-Gx analysis for trip blank
KES 11/9/2022

Observations/Comments

___ Allow water samples to settle, collect aliquot from clear portion ☐

___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

___ Dissolved metal samples were field filtered

Other * non-preserved (7-day)
+VOAs preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature Samantha Lindstrom	Signature	Signature	Signature
Printed Name Samantha Lindstrom	Printed Name Jacob Hall	Printed Name	Printed Name
Company Landau Associates	Company AQ, LLC	Company	Company
Date 11/8/22 Time 1434	Date 11/8/22 Time 1434	Date Time	Date Time

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative 10/2018

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-21A-221108	22K0178-01	Water	08-Nov-2022 11:44	08-Nov-2022 14:34
MW-18A-221108	22K0178-02	Water	08-Nov-2022 12:12	08-Nov-2022 14:34
MW-17A-221108	22K0178-03	Water	08-Nov-2022 12:38	08-Nov-2022 14:34
Tripblanks-221108	22K0178-04	Water	08-Nov-2022 00:00	08-Nov-2022 14:34

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control high in the CCAL and bromoform is out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau/Boeing Project Name: DC Regional GW

COC No(s): ~~NA~~ Delivered by: Fed-Ex UPS Courier ~~Hand Delivered~~ Other: _____

Assigned ARI Job No: 22K0178 Tracking No: _____ ~~NA~~

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1434 2.1 ____ ____ ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: ~~70009708~~

Cooler Accepted by: TG Date: 11/08/22 Time: 1434

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?			~~NO~~
What kind of packing material was used? ... Bubble Wrap ~~Wet Ice~~ Gel Packs ~~Baggies~~ ~~Foam Block~~ Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	~~YES~~	NO
How were bottles sealed in plastic bags?	Individually	Grouped	~~Not~~
Did all bottles arrive in good condition (unbroken)?		~~YES~~	NO
Were all bottle labels complete and legible?		~~YES~~	NO
Did the number of containers listed on COC match with the number of containers received?		~~YES~~	NO
Did all bottle labels and tags agree with custody papers?		~~YES~~	NO
Were all bottles used correct for the requested analyses?		~~YES~~	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	~~NA~~	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	~~NO~~
Was sufficient amount of sample sent in each bottle?		~~YES~~	NO
Date VOC Trip Blank was made at ARI	NA	11/7/22	

Were the sample(s) split by ARI? ~~NA~~ YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: PLB Date: 11/8/22 Time: 15:31 Labels checked by: _____

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

MW-21A-221108

22K0178-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2022 11:44

Instrument: IC930 Analyst: KLD — Analyzed: 11/08/2022 23:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0178-01 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	6.98	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

MW-18A-221108

22K0178-02 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2022 12:12

Instrument: IC930 Analyst: KLD — Analyzed: 11/09/2022 00:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0178-02 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	2.42	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

MW-17A-221108

22K0178-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 12:38

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 15:33

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0178-03 B

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	13.8	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

MW-17A-221108

22K0178-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 12:38

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 15:33

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

MW-17A-221108

22K0178-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 12:38

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 15:33

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.3*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

MW-17A-221108

22K0178-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2022 12:38

Instrument: IC930 Analyst: KLD — Analyzed: 11/09/2022 00:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0178-03 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Tripblanks-221108

22K0178-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 00:00
Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 12:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0178-04 A
Preparation Batch: BKK0260 — Sample Size: 10 mL
Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	21.4	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Tripblanks-221108

22K0178-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 00:00

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 12:49

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*98.4*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Tripblanks-221108

22K0178-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 00:00

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 12:49

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*98.0*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK2)			Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39						
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	2.00	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39						
Surrogate: 1,2-Dichloroethane-d4	5.17		ug/L	*5.00*		*103*	*80-129*			
Surrogate: Toluene-d8	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.73		ug/L	*5.00*		*94.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01		ug/L	*5.00*		*100*	*80-120*			
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
Chloromethane	8.87	0.50	ug/L	10.0		88.7	60-138			
Vinyl Chloride	10.3	0.20	ug/L	10.0		103	66-133			
Bromomethane	10.5	1.00	ug/L	10.0		105	72-131			
Chloroethane	10.6	0.20	ug/L	10.0		106	60-155			
Trichlorofluoromethane	10.3	0.20	ug/L	10.0		103	62-141			
Acrolein	53.1	5.00	ug/L	50.0		106	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.1	0.20	ug/L	10.0		111	76-129			
Acetone	52.3	5.00	ug/L	50.0		105	58-142			
1,1-Dichloroethene	10.7	0.20	ug/L	10.0		107	69-135			
Iodomethane	11.3	1.00	ug/L	10.0		113	56-147			
Methylene Chloride	10.6	1.00	ug/L	10.0		106	65-135			
Acrylonitrile	11.0	1.00	ug/L	10.0		110	64-134			
Carbon Disulfide	10.7	0.20	ug/L	10.0		107	78-125			
trans-1,2-Dichloroethene	10.5	0.20	ug/L	10.0		105	78-128			
Vinyl Acetate	10.2	0.20	ug/L	10.0		102	55-138			
1,1-Dichloroethane	10.5	0.20	ug/L	10.0		105	76-124			
2-Butanone	55.0	5.00	ug/L	50.0		110	61-140			
2,2-Dichloropropane	10.1	0.20	ug/L	10.0		101	66-147			
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	80-121			
Chloroform	10.7	0.20	ug/L	10.0		107	80-122			
Bromochloromethane	10.5	0.20	ug/L	10.0		105	80-121			
1,1,1-Trichloroethane	10.1	0.20	ug/L	10.0		101	79-123			
1,1-Dichloropropene	10.6	0.20	ug/L	10.0		106	80-127			
Carbon tetrachloride	8.11	0.20	ug/L	10.0		81.1	53-137			
1,2-Dichloroethane	10.7	0.20	ug/L	10.0		107	75-123			
Benzene	11.0	0.20	ug/L	10.0		110	80-120			
Trichloroethene	10.7	0.20	ug/L	10.0		107	80-120			
1,2-Dichloropropane	10.8	0.20	ug/L	10.0		108	80-120			
Bromodichloromethane	9.77	0.20	ug/L	10.0		97.7	80-121			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
Dibromomethane	10.6	0.20	ug/L	10.0		106	80-120			
4-Methyl-2-Pentanone	58.1	5.00	ug/L	50.0		116	67-133			
cis-1,3-Dichloropropene	10.5	0.20	ug/L	10.0		105	80-124			
Toluene	10.9	0.20	ug/L	10.0		109	80-120			
trans-1,3-Dichloropropene	10.3	0.20	ug/L	10.0		103	71-127			
2-Hexanone	56.1	5.00	ug/L	50.0		112	69-133			
1,1,2-Trichloroethane	10.8	0.20	ug/L	10.0		108	80-121			
1,3-Dichloropropane	10.8	0.20	ug/L	10.0		108	80-120			
Tetrachloroethene	11.2	0.20	ug/L	10.0		112	80-120			
Dibromochloromethane	8.88	0.20	ug/L	10.0		88.8	65-135			
1,2-Dibromoethane	10.9	0.20	ug/L	10.0		109	80-121			
Chlorobenzene	11.0	0.20	ug/L	10.0		110	80-120			
Ethylbenzene	10.9	0.20	ug/L	10.0		109	80-120			
1,1,1,2-Tetrachloroethane	9.52	0.20	ug/L	10.0		95.2	80-120			
m,p-Xylene	22.4	0.40	ug/L	20.0		112	80-121			
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121			
Styrene	11.5	0.20	ug/L	10.0		115	80-124			
Bromoform	7.97	0.20	ug/L	10.0		79.7	51-134			Q
1,1,2,2-Tetrachloroethane	11.1	0.20	ug/L	10.0		111	77-123			
1,2,3-Trichloropropane	11.2	0.50	ug/L	10.0		112	76-125			
trans-1,4-Dichloro 2-Butene	10.8	1.00	ug/L	10.0		108	55-129			
n-Propylbenzene	12.1	0.20	ug/L	10.0		121	78-130			Q
Bromobenzene	11.4	0.20	ug/L	10.0		114	80-120			
Isopropyl Benzene	11.9	0.20	ug/L	10.0		119	80-128			
2-Chlorotoluene	11.5	0.20	ug/L	10.0		115	78-122			
4-Chlorotoluene	11.6	0.20	ug/L	10.0		116	80-121			
t-Butylbenzene	11.6	0.20	ug/L	10.0		116	78-125			
1,3,5-Trimethylbenzene	11.9	0.20	ug/L	10.0		119	80-129			
1,2,4-Trimethylbenzene	11.8	0.20	ug/L	10.0		118	80-127			
s-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-129			
4-Isopropyl Toluene	11.8	0.20	ug/L	10.0		118	79-130			
1,3-Dichlorobenzene	11.5	0.20	ug/L	10.0		115	80-120			
1,4-Dichlorobenzene	11.3	0.20	ug/L	10.0		113	80-120			
n-Butylbenzene	11.7	0.20	ug/L	10.0		117	74-129			
1,2-Dichlorobenzene	11.3	0.20	ug/L	10.0		113	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
1,2-Dibromo-3-chloropropane	9.38	0.50	ug/L	10.0		93.8	62-123			
1,2,4-Trichlorobenzene	11.5	0.50	ug/L	10.0		115	64-124			
Hexachloro-1,3-Butadiene	10.8	2.00	ug/L	10.0		108	58-123			
Naphthalene	11.5	0.50	ug/L	10.0		115	50-134			
1,2,3-Trichlorobenzene	11.4	0.50	ug/L	10.0		114	49-133			
Surrogate: 1,2-Dichloroethane-d4	5.00		ug/L	*5.00*		*100*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.79		ug/L	*5.00*		*95.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*80-120*			
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
Chloromethane	9.19	0.50	ug/L	10.0		91.9	60-138	3.58	30	
Vinyl Chloride	10.4	0.20	ug/L	10.0		104	66-133	1.12	30	
Bromomethane	10.7	1.00	ug/L	10.0		107	72-131	1.90	30	
Chloroethane	10.4	0.20	ug/L	10.0		104	60-155	1.62	30	
Trichlorofluoromethane	9.96	0.20	ug/L	10.0		99.6	62-141	3.23	30	
Acrolein	55.7	5.00	ug/L	50.0		111	52-190	4.68	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.5	0.20	ug/L	10.0		115	76-129	3.11	30	
Acetone	55.4	5.00	ug/L	50.0		111	58-142	5.85	30	
1,1-Dichloroethene	11.2	0.20	ug/L	10.0		112	69-135	5.20	30	
Iodomethane	11.7	1.00	ug/L	10.0		117	56-147	3.69	30	
Methylene Chloride	11.0	1.00	ug/L	10.0		110	65-135	3.56	30	
Acrylonitrile	11.6	1.00	ug/L	10.0		116	64-134	5.45	30	
Carbon Disulfide	11.4	0.20	ug/L	10.0		114	78-125	6.09	30	
trans-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	78-128	4.00	30	
Vinyl Acetate	10.4	0.20	ug/L	10.0		104	55-138	2.21	30	
1,1-Dichloroethane	10.9	0.20	ug/L	10.0		109	76-124	4.14	30	
2-Butanone	58.9	5.00	ug/L	50.0		118	61-140	6.73	30	
2,2-Dichloropropane	10.2	0.20	ug/L	10.0		102	66-147	0.84	30	
cis-1,2-Dichloroethene	11.0	0.20	ug/L	10.0		110	80-121	3.00	30	
Chloroform	11.0	0.20	ug/L	10.0		110	80-122	2.86	30	
Bromochloromethane	10.9	0.20	ug/L	10.0		109	80-121	3.55	30	
1,1,1-Trichloroethane	10.3	0.20	ug/L	10.0		103	79-123	2.31	30	
1,1-Dichloropropene	10.9	0.20	ug/L	10.0		109	80-127	2.49	30	
Carbon tetrachloride	8.48	0.20	ug/L	10.0		84.8	53-137	4.48	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
1,2-Dichloroethane	10.8	0.20	ug/L	10.0		108	75-123	1.70	30	
Benzene	11.3	0.20	ug/L	10.0		113	80-120	2.79	30	
Trichloroethene	11.1	0.20	ug/L	10.0		111	80-120	3.92	30	
1,2-Dichloropropane	11.1	0.20	ug/L	10.0		111	80-120	2.45	30	
Bromodichloromethane	10.1	0.20	ug/L	10.0		101	80-121	3.67	30	
Dibromomethane	11.0	0.20	ug/L	10.0		110	80-120	4.04	30	
4-Methyl-2-Pentanone	60.0	5.00	ug/L	50.0		120	67-133	3.37	30	
cis-1,3-Dichloropropene	10.8	0.20	ug/L	10.0		108	80-124	3.20	30	
Toluene	11.2	0.20	ug/L	10.0		112	80-120	2.18	30	
trans-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	71-127	4.48	30	
2-Hexanone	58.5	5.00	ug/L	50.0		117	69-133	4.17	30	
1,1,2-Trichloroethane	11.2	0.20	ug/L	10.0		112	80-121	3.93	30	
1,3-Dichloropropane	11.1	0.20	ug/L	10.0		111	80-120	2.89	30	
Tetrachloroethene	11.3	0.20	ug/L	10.0		113	80-120	0.80	30	
Dibromochloromethane	9.36	0.20	ug/L	10.0		93.6	65-135	5.18	30	
1,2-Dibromoethane	11.3	0.20	ug/L	10.0		113	80-121	4.13	30	
Chlorobenzene	11.3	0.20	ug/L	10.0		113	80-120	3.04	30	
Ethylbenzene	11.3	0.20	ug/L	10.0		113	80-120	3.70	30	
1,1,1,2-Tetrachloroethane	9.92	0.20	ug/L	10.0		99.2	80-120	4.12	30	
m,p-Xylene	23.0	0.40	ug/L	20.0		115	80-121	2.49	30	
o-Xylene	11.2	0.20	ug/L	10.0		112	80-121	1.59	30	
Styrene	11.9	0.20	ug/L	10.0		119	80-124	3.42	30	
Bromoform	8.46	0.20	ug/L	10.0		84.6	51-134	5.97	30	Q
1,1,2,2-Tetrachloroethane	11.3	0.20	ug/L	10.0		113	77-123	1.45	30	
1,2,3-Trichloropropane	11.3	0.50	ug/L	10.0		113	76-125	0.37	30	
trans-1,4-Dichloro 2-Butene	10.6	1.00	ug/L	10.0		106	55-129	1.79	30	
n-Propylbenzene	12.1	0.20	ug/L	10.0		121	78-130	0.09	30	Q
Bromobenzene	11.5	0.20	ug/L	10.0		115	80-120	1.14	30	
Isopropyl Benzene	12.1	0.20	ug/L	10.0		121	80-128	1.27	30	
2-Chlorotoluene	11.7	0.20	ug/L	10.0		117	78-122	1.88	30	
4-Chlorotoluene	11.3	0.20	ug/L	10.0		113	80-121	3.01	30	
t-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-125	1.00	30	
1,3,5-Trimethylbenzene	12.0	0.20	ug/L	10.0		120	80-129	0.59	30	
1,2,4-Trimethylbenzene	11.9	0.20	ug/L	10.0		119	80-127	0.80	30	
s-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-129	0.51	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
4-Isopropyl Toluene	12.0	0.20	ug/L	10.0		120	79-130	1.68	30	
1,3-Dichlorobenzene	11.6	0.20	ug/L	10.0		116	80-120	1.31	30	
1,4-Dichlorobenzene	11.5	0.20	ug/L	10.0		115	80-120	1.40	30	
n-Butylbenzene	11.7	0.20	ug/L	10.0		117	74-129	0.05	30	
1,2-Dichlorobenzene	11.6	0.20	ug/L	10.0		116	80-120	2.77	30	
1,2-Dibromo-3-chloropropane	9.82	0.50	ug/L	10.0		98.2	62-123	4.64	30	
1,2,4-Trichlorobenzene	11.5	0.50	ug/L	10.0		115	64-124	0.69	30	
Hexachloro-1,3-Butadiene	11.0	2.00	ug/L	10.0		110	58-123	2.18	30	
Naphthalene	11.9	0.50	ug/L	10.0		119	50-134	3.51	30	
1,2,3-Trichlorobenzene	11.5	0.50	ug/L	10.0		115	49-133	1.22	30	
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.89		ug/L	*5.00*		*97.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.85		ug/L	*5.00*		*96.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.1*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0256 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0256-BLK1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:37							
Nitrate-N	ND	0.100	0.100	mg/L							U
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0256-BS1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:57							
Nitrate-N	5.37	0.100	0.100	mg/L	5.00		107	90-110			
Sulfate	5.29	0.100	0.100	mg/L	5.00		106	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	21-Nov-2022 08:26

Notes and Definitions

*	Flagged value is not within established control limits.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

07 December 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0305	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

AR: 22K0305

LANDAU ASSOCIATES

Chain-of-Custody Record

☐ North Seattle (206) 631-8660 ☒ Tacoma (253) 926-2493 ☐ Olympia (360) 791-3178
☐ Spokane (509) 327-9737 ☐ Portland (503) 542-1080 ☐ _____

Date 11/16/22
Page 1 of 1

Turnaround Time: Standard / Accelerated

Project Name DC Regional GW Project No. 025217.002.032
Project Location/Event AOC-5 / November 2022
Sampler's Name Simone Rodriguez
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com
paul.m.morin@boeing.com paul.d.yount@boeing.com

Special Handling Requirements:
Shipment Method:
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	BTEX (8260D)	TPH-G (NWTPH-G)	Sulfate (E300.0)	Nitrate, Nitrite (300.0)	Observations/Comments
BDC-103-221116	11/16/22	936	Aq	6	X	X	X	X	
BDC-DUP2-221116	11/16/22	939	Aq	6	X	X	X	X	
Trip blanks-221116	—	—	AQ	2	X	X			

Allow water samples to settle, collect aliquot from clear portion ☐
NWTPH-Dx - Acid wash cleanup ☐ - Silica gel cleanup ☐
Dissolved metal samples were field filtered

Other

Relinquished by	Received by	Relinquished by	Received by
Signature CM Rodr	Signature Philip Bates	Signature	Signature
Printed Name Simone Rodriguez	Printed Name Philip Bates	Printed Name	Printed Name
Company Landau Associates	Company AR	Company	Company
Date 11/16/22 Time 1024	Date 11/16/22 Time 10:24	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-103-221116	22K0305-01	Water	16-Nov-2022 09:36	16-Nov-2022 10:24
BDC-DUP2-221116	22K0305-02	Water	16-Nov-2022 09:39	16-Nov-2022 10:24
Tripblanks-221116	22K0305-03	Water	16-Nov-2022 00:00	16-Nov-2022 10:24

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Work Order Case Narrative

Gasoline by NWTPH-g (GC/MS)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: DC Regional GW

Project Name: AOC-5 / DC Regional GW

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22K0305

Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 10:24 — 4.6

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90097708

Cooler Accepted by: PIB Date: 11/16/22 Time: 10:24

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	(NA)	(YES) PIB 11/16	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	11/07	

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: PIB Date: 11/16/22 Time: 10:44 Labels checked by: [signature]

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-103-221116

22K0305-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/16/2022 09:36

Instrument: NT3 Analyst: PKC — Analyzed: 11/17/2022 15:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0305-01 E

Preparation Batch: BKK0521 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	0.50	ug/L	
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	28.4	ug/L	
m,p-Xylene	179601-23-1	1	0.40	4.88	ug/L	
o-Xylene	95-47-6	1	0.20	0.86	ug/L	
Xylenes, total	1330-20-7	1	0.60	5.73	ug/L	
Surrogate: Toluene-d8			*80-120 %*	*96.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-103-221116

22K0305-01 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/16/2022 09:36

Instrument: NT3 Analyst: PKC — Analyzed: 11/17/2022 15:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0305-01 E

Preparation Batch: BKK0521 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	462	ug/L	
HC ID: GAS						
Surrogate: Toluene-d8			*80-120 %*	*96.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-103-221116

22K0305-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/16/2022 09:36

Instrument: IC930 Analyst: KLD — Analyzed: 11/16/2022 20:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0305-01 A

Preparation Batch: BKK0488 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-103-221116

22K0305-01RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/16/2022 09:36

Instrument: IC930 Analyst: KLD — Analyzed: 11/19/2022 04:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0305-01RE1 A

Preparation Batch: BKK0488 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	50	5.00	5.00	175	mg/L	D

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-DUP2-221116

22K0305-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/16/2022 09:39

Instrument: NT3 Analyst: PKC — Analyzed: 11/17/2022 16:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0305-02 C

Preparation Batch: BKK0521 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	0.53	ug/L	
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	26.8	ug/L	
m,p-Xylene	179601-23-1	1	0.40	4.62	ug/L	
o-Xylene	95-47-6	1	0.20	0.77	ug/L	
Xylenes, total	1330-20-7	1	0.60	5.39	ug/L	
Surrogate: Toluene-d8			*80-120 %*	*97.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*103*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-DUP2-221116

22K0305-02 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/16/2022 09:39

Instrument: NT3 Analyst: PKC — Analyzed: 11/17/2022 16:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0305-02 C

Preparation Batch: BKK0521 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	482	ug/L	
HC ID: GAS						
Surrogate: Toluene-d8			*80-120 %*	*97.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*103*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-DUP2-221116

22K0305-02 (Water)

Wet Chemistry

Method: EPA 300.0
Instrument: IC930 Analyst: KLD

Sampled: 11/16/2022 09:39
Analyzed: 11/16/2022 21:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BKK0488
Prepared: 11/16/2022
Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 22K0305-02 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

BDC-DUP2-221116

22K0305-02RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/16/2022 09:39

Instrument: IC930 Analyst: KLD — Analyzed: 11/19/2022 05:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0305-02RE1 A

Preparation Batch: BKK0488 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	50	5.00	5.00	175	mg/L	D

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Tripblanks-221116

22K0305-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/16/2022 00:00
Instrument: NT3 Analyst: PKC — Analyzed: 11/17/2022 14:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0305-03 B
Preparation Batch: BKK0521 — Sample Size: 10 mL
Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.9*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Tripblanks-221116

22K0305-03 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 11/16/2022 00:00

Instrument: NT3 Analyst: PKC — Analyzed: 11/17/2022 14:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0305-03 B

Preparation Batch: BKK0521 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*99.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0521 - NWTPHg

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0521-BLK1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 14:08						
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.91		ug/L	*5.00*		*98.2*	*80-120*			
Blank (BKK0521-BLK2)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 14:08						
Benzene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.91		ug/L	*5.00*		*98.2*	*80-120*			
LCS (BKK0521-BS1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 10:47						
Gasoline Range Organics (Tol-Nap)	1020	100	ug/L	1000		102	72-128			
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.04		ug/L	*5.00*		*101*	*80-120*			
LCS (BKK0521-BS2)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 11:31						
Benzene	10.4	0.20	ug/L	10.0		104	80-120			
Toluene	10.3	0.20	ug/L	10.0		103	80-120			
Ethylbenzene	10.3	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	21.7	0.40	ug/L	20.0		109	80-121			
o-Xylene	10.6	0.20	ug/L	10.0		106	80-121			
Xylenes, total	32.4	0.60	ug/L	30.0		108	76-127			
Surrogate: Toluene-d8	4.97		ug/L	*5.00*		*99.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.16		ug/L	*5.00*		*103*	*80-120*			
LCS Dup (BKK0521-BSD1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 11:53						
Gasoline Range Organics (Tol-Nap)	1020	100	ug/L	1000		102	72-128	0.19	30	
Surrogate: Toluene-d8	4.93		ug/L	*5.00*		*98.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.95		ug/L	*5.00*		*99.0*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0521 - EPA 8260D

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0521-BSD2)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 13:24						
Benzene	10.7	0.20	ug/L	10.0		107	80-120	3.17	30	
Toluene	10.6	0.20	ug/L	10.0		106	80-120	2.41	30	
Ethylbenzene	10.8	0.20	ug/L	10.0		108	80-120	4.34	30	
m,p-Xylene	22.4	0.40	ug/L	20.0		112	80-121	3.14	30	
o-Xylene	11.1	0.20	ug/L	10.0		111	80-121	4.35	30	
Xylenes, total	33.5	0.60	ug/L	30.0		112	76-127	3.54	30	
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.11		ug/L	*5.00*		*102*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0488 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0488-BLK1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 19:28							
Nitrate-N	ND	0.100	0.100	mg/L							U
Nitrite-N	ND	0.100	0.100	mg/L							U
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0488-BS1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 19:48							
Nitrate-N	5.28	0.100	0.100	mg/L	5.00		106	90-110			
Nitrite-N	5.02	0.100	0.100	mg/L	5.00		100	90-110			
Sulfate	5.09	0.100	0.100	mg/L	5.00		102	90-110			
Duplicate (BKK0488-DUP1)		**Source: 22K0305-01**		Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 20:28							
Nitrate-N	ND	0.100	0.100	mg/L		ND					U
Nitrite-N	ND	0.100	0.100	mg/L		ND					U
Duplicate (BKK0488-DUP2)		**Source: 22K0305-01RE1**		Prepared: 16-Nov-2022 Analyzed: 19-Nov-2022 04:58							
Nitrate-N	ND	5.00	5.00	mg/L		ND					U
Nitrite-N	ND	5.00	5.00	mg/L		ND					U
Sulfate	172	5.00	5.00	mg/L		175			1.49	20	D
Matrix Spike (BKK0488-MS1)		**Source: 22K0305-01**		Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 20:48							
Nitrate-N	2.10	0.100	0.100	mg/L	1.98	ND	106	75-125			
Nitrite-N	1.79	0.100	0.100	mg/L	2.03	ND	88.3	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike (BKK0488-MS3)		**Source: 22K0305-01RE1**		Prepared: 16-Nov-2022 Analyzed: 21-Nov-2022 21:26							
Sulfate	330	5.00	20.0	mg/L	201	175	76.8	75-125			D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:23

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

03 June 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22E0178	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Chain-of-Custody Record 22E0178

LANDAU ASSOCIATES

- [x] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] _____

Date 5/10/22

Page 1 of 1

Turnaround Time: Standard X Accelerated _____

Project Name DC Regional GW Project No. 005217.002.032.032

Project Location/Event SWMU-17/Mar 2022

Sampler's Name Armando Huerta / Jag Marin

Project Contact Chris Kimmel / Jen Parsons

Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements: _____

Shipment Method: Drop off

Stored on ice: (Yes) / No

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC (8260D) Nonprocessed ●	AMEE (RSK-175) (MW) Δ	TOC (SM 5310C)	Sulfate (E300.0)	Nitrate, nitrite (E300.0)	Total & Dissolved Arsenic (6020B)	Observations/Comments
Trip Blanks	—	—	AQ	4	X	X					
BDC-05-18-220510	5/10/22	821	AQ	9	X	X	X	X		X	
BDC-05-01-220510	5/10/22	822	AQ	9	X	X	X	X		X	
BDC-05-21-220510	5/10/22	909	AQ	9	X	X	X	X		X	
BDC-05-23-220510	5/10/22	959	AQ	7	X		X	X		X	
BDC-05-07-220510	5/10/22	1000	AQ	9	X	X	X	X		X	
BDC-05-20-220510	5/10/22	1035	AQ	9	X	X	X	X		X	
BDC-05-09-220510	5/10/22	1110	AQ	9	X	X	X	X		X	
BDC-05-22-220510	5/10/22	1123	AQ	7	X		X	X		X	
BDC-05-17-220510	5/10/22	1205	AQ	9	X	X	X	X		X	
BDC-05-16-220510	5/10/22	1253	AQ	9	X	X	X	X		X	
BDC-05-10-220510	5/10/22	1320	AQ	9	X	X	X	X		X	
BDC-05-15-220510	5/10/22	1337	AQ	9	X	X	X	X		X	
BDC-05-11-220510	5/10/22	1338	AQ	9	X	X	X	X		X	
BDC-05-24-220510	5/10/22	1443	AQ	9	X	X	X	X		X	
BDC-05-03-220510	5/10/22	1454	AQ	9	X	X	X	X		X	
BDC-05-08-220510	5/10/22	1533	AQ	7	X		X	X		X	
BDC-05-04-220510	5/10/22	1609	AQ	7	X		X	X	X	X	

Observations/Comments

- [ ] Allow water samples to settle, collect aliquot from clear portion
- [ ] NWTPH-Dx - Acid wash cleanup - Silica gel cleanup
- [x] Dissolved metal samples were field filtered

Other Δ PCE, TCE, DCE, VC

● 200.8 ICP-MS

Δ VOAs w/ HCl

☐ 48 hour hold for nitrate

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Armando Huerta	Printed Name Suzanne Hedby	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 5/10/22 Time 1653	Date 5/10/22 Time 1653	Date Time	Date Time

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

10/2018

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-05-18-220510	22E0178-01	Water	10-May-2022 08:21	10-May-2022 16:53
BDC-05-18-220510	22E0178-02	Water	10-May-2022 08:21	10-May-2022 16:53
BDC-05-02-220510	22E0178-03	Water	10-May-2022 08:22	10-May-2022 16:53
BDC-05-02-220510	22E0178-04	Water	10-May-2022 08:22	10-May-2022 16:53
BDC-05-21-220510	22E0178-05	Water	10-May-2022 09:09	10-May-2022 16:53
BDC-05-21-220510	22E0178-06	Water	10-May-2022 09:09	10-May-2022 16:53
BDC-05-23-220510	22E0178-07	Water	10-May-2022 09:59	10-May-2022 16:53
BDC-05-23-220510	22E0178-08	Water	10-May-2022 09:59	10-May-2022 16:53
BDC-05-07-220510	22E0178-09	Water	10-May-2022 10:00	10-May-2022 16:53
BDC-05-07-220510	22E0178-10	Water	10-May-2022 10:00	10-May-2022 16:53
BDC-05-20-220510	22E0178-11	Water	10-May-2022 10:35	10-May-2022 16:53
BDC-05-20-220510	22E0178-12	Water	10-May-2022 10:35	10-May-2022 16:53
BDC-05-09-220510	22E0178-13	Water	10-May-2022 11:10	10-May-2022 16:53
BDC-05-09-220510	22E0178-14	Water	10-May-2022 11:10	10-May-2022 16:53
BDC-05-22-220510	22E0178-15	Water	10-May-2022 11:23	10-May-2022 16:53
BDC-05-22-220510	22E0178-16	Water	10-May-2022 11:23	10-May-2022 16:53
BDC-05-17-220510	22E0178-17	Water	10-May-2022 12:05	10-May-2022 16:53
BDC-05-17-220510	22E0178-18	Water	10-May-2022 12:05	10-May-2022 16:53
BDC-05-16-220510	22E0178-19	Water	10-May-2022 12:53	10-May-2022 16:53
BDC-05-16-220510	22E0178-20	Water	10-May-2022 12:53	10-May-2022 16:53
BDC-05-10-220510	22E0178-21	Water	10-May-2022 12:20	10-May-2022 16:53
BDC-05-10-220510	22E0178-22	Water	10-May-2022 12:20	10-May-2022 16:53
BDC-05-15-220510	22E0178-23	Water	10-May-2022 13:37	10-May-2022 16:53
BDC-05-15-220510	22E0178-24	Water	10-May-2022 13:37	10-May-2022 16:53
BDC-05-11-220510	22E0178-25	Water	10-May-2022 13:38	10-May-2022 16:53
BDC-05-11-220510	22E0178-26	Water	10-May-2022 13:38	10-May-2022 16:53
BDC-05-24-220510	22E0178-27	Water	10-May-2022 14:43	10-May-2022 16:53
BDC-05-24-220510	22E0178-28	Water	10-May-2022 14:43	10-May-2022 16:53
BDC-05-03-220510	22E0178-29	Water	10-May-2022 14:54	10-May-2022 16:53
BDC-05-03-220510	22E0178-30	Water	10-May-2022 14:54	10-May-2022 16:53
BDC-05-08-220510	22E0178-31	Water	10-May-2022 15:33	10-May-2022 16:53
BDC-05-08-220510	22E0178-32	Water	10-May-2022 15:33	10-May-2022 16:53
BDC-05-04-220510	22E0178-33	Water	10-May-2022 16:08	10-May-2022 16:53
BDC-05-04-220510	22E0178-34	Water	10-May-2022 06:08	10-May-2022 16:53

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau/Boeing Project Name: DC

COC No(s): NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 22E0178 Tracking No: NA

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 4.4 | 4.2 | 3.0 | 4.9 | 4.8

Time

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00256S

Cooler Accepted by: CB Date: 5/10/22 Time: 1653

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	Broken in lab	

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: [signature] Date: 05/11/22 Time: 14:59 Labels checked by:

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

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

Additional Notes, Discrepancies, & Resolutions:

TRIP BLANK BROKEN in login.
ONE UNPRES 05-24 BROKEN
TOC 05-17 Broken. Anion volume split and preserved 05/11/22

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 5/11/2022 4:00:40PM

WORK ORDER

22E0178

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: Boeing Regional GW Developmental Center**

Preservation Confirmation

Container ID	Container Type	pH
22E0178-01 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-01 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-01 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-01 D	HDPE NM, 1000 mL	
22E0178-01 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-01 F	VOA Vial, Clear, 40 mL	
22E0178-01 G	VOA Vial, Clear, 40 mL	
22E0178-01 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-02 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-03 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-03 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-03 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-03 D	HDPE NM, 1000 mL	
22E0178-03 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-03 F	VOA Vial, Clear, 40 mL	
22E0178-03 G	VOA Vial, Clear, 40 mL	
22E0178-03 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-04 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-05 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-05 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-05 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-05 D	HDPE NM, 1000 mL	
22E0178-05 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-05 F	VOA Vial, Clear, 40 mL	
22E0178-05 G	VOA Vial, Clear, 40 mL	
22E0178-05 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-06 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-07 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-07 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-07 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-07 D	HDPE NM, 1000 mL	
22E0178-07 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-07 F	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	↓
22E0178-08 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	

Reviewed By Date

WORK ORDER

22E0178

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

22E0178-09 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-09 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-09 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-09 D	HDPE NM, 1000 mL	
22E0178-09 E	HDPE NM, 1000 mL, 1:1 HNO3	< 2 Pass
22E0178-09 F	VOA Vial, Clear, 40 mL	
22E0178-09 G	VOA Vial, Clear, 40 mL	
22E0178-09 H	Glass NM, Amber, ~~500~~ mL, 9N H2SO4	< 2 Pass
22E0178-10 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-11 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-11 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-11 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-11 D	HDPE NM, 1000 mL	
22E0178-11 E	HDPE NM, 1000 mL, 1:1 HNO3	< 2 Pass
22E0178-11 F	VOA Vial, Clear, 40 mL	
22E0178-11 G	VOA Vial, Clear, 40 mL	
22E0178-11 H	Glass NM, Amber, ~~500~~ mL, 9N H2SO4	< 2 Pass
22E0178-12 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-13 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-13 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-13 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-13 D	HDPE NM, 1000 mL	
22E0178-13 E	HDPE NM, 1000 mL, 1:1 HNO3	< 2 Pass
22E0178-13 F	VOA Vial, Clear, 40 mL	
22E0178-13 G	VOA Vial, Clear, 40 mL	
22E0178-13 H	Glass NM, Amber, ~~500~~ mL, 9N H2SO4	< 2 Pass
22E0178-14 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-15 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-15 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-15 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-15 D	HDPE NM, 1000 mL	
22E0178-15 E	HDPE NM, 1000 mL, 1:1 HNO3	< 2 Pass
22E0178-15 F	Glass NM, Amber, ~~500~~ mL, 9N H2SO4	↓
22E0178-16 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-17 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-17 B	VOA Vial, Clear, 40 mL, HCL	

Reviewed By Date

WORK ORDER

22E0178

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Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: Boeing Regional GW Developmental Center**

22E0178-17 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-17 D	HDPE NM, 1000 mL	
22E0178-17 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-17 F	VOA Vial, Clear, 40 mL	
22E0178-17 G	VOA Vial, Clear, 40 mL	
22E0178-17 H	Glass NM, Amber, 250 mL, 9N H2SO4	<2 Pass
22E0178-18 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-19 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-19 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-19 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-19 D	HDPE NM, 1000 mL	
22E0178-19 E	HDPE NM, 1000 mL, 1:1 HNO3	< 2 Pass
22E0178-19 F	VOA Vial, Clear, 40 mL	
22E0178-19 G	VOA Vial, Clear, 40 mL	
22E0178-19 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	< 2 Pass
22E0178-20 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-21 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-21 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-21 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-21 D	HDPE NM, 1000 mL	
22E0178-21 E	HDPE NM, 1000 mL, 1:1 HNO3	< 2 Pass
22E0178-21 F	VOA Vial, Clear, 40 mL	
22E0178-21 G	VOA Vial, Clear, 40 mL	
22E0178-21 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-22 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-23 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-23 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-23 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-23 D	HDPE NM, 1000 mL	
22E0178-23 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-23 F	VOA Vial, Clear, 40 mL	
22E0178-23 G	VOA Vial, Clear, 40 mL	
22E0178-23 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-24 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-25 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-25 B	VOA Vial, Clear, 40 mL, HCL	

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22E0178

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Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: Boeing Regional GW Developmental Center**

22E0178-25 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-25 D	HDPE NM, 1000 mL	
22E0178-25 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-25 F	VOA Vial, Clear, 40 mL	
22E0178-25 G	VOA Vial, Clear, 40 mL	
22E0178-25 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-26 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-27 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-27 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-27 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-27 D	HDPE NM, 1000 mL	
22E0178-27 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-27 F	VOA Vial, Clear, 40 mL	
22E0178-27 G	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-28 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-29 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-29 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-29 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-29 D	HDPE NM, 1000 mL	
22E0178-29 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-29 F	VOA Vial, Clear, 40 mL	
22E0178-29 G	VOA Vial, Clear, 40 mL	
22E0178-29 H	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2 Pass
22E0178-30 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-31 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-31 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-31 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-31 D	HDPE NM, 1000 mL	
22E0178-31 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass
22E0178-31 F	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	↓
22E0178-32 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	↓
22E0178-33 A	VOA Vial, Clear, 40 mL, HCL	
22E0178-33 B	VOA Vial, Clear, 40 mL, HCL	
22E0178-33 C	VOA Vial, Clear, 40 mL, HCL	
22E0178-33 D	HDPE NM, 1000 mL	
22E0178-33 E	HDPE NM, 1000 mL, 1:1 HNO3	<2 Pass

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22E0178

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Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: Boeing Regional GW Developmental Center**

22E0178-33 F	Glass NM, Amber, ~~500~~ 250 mL, 9N H2SO4	<2	Pass
22E0178-34 A	HDPE NM, 1000 mL, 1:1 HNO3 (FF)		↓

MQB
Preservation Confirmed By

5/11/2022
Date

Reviewed By

Date

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Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-18-220510

22E0178-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 08:21

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 15:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-01 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.42	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.79	ug/L	
Trichloroethene	79-01-6	1	0.20	1.70	ug/L	
Tetrachloroethene	127-18-4	1	0.20	2.01	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*93.2*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*98.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-18-220510

22E0178-01 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 08:21

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 11:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-01 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	236	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*76.8*	*%*	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-18-220510

22E0178-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 08:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 22:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-01 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	3.55	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.836	ug/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-18-220510

22E0178-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 08:21

Instrument: IC930 Analyst: BF — Analyzed: 05/11/2022 22:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-01 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	7.74	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-18-220510

22E0178-01 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 08:21

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 08:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-01 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.44	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-18-220510

22E0178-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 08:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 22:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-02 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	1.07	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	0.281	ug/L	J

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-02-220510

22E0178-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 08:22

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 15:32

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-03 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.30	ug/L	
Trichloroethene	79-01-6	1	0.20	0.59	ug/L	
Tetrachloroethene	127-18-4	1	0.20	0.93	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*96.6*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*93.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-02-220510

22E0178-03 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 08:22

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 11:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-03 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5020	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*80.5*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-02-220510

22E0178-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 08:22

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-03 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	8.44	ug/L	D
Copper	7440-50-8	2	0.346	1.00	41.1	ug/L	D

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-02-220510

22E0178-03 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 08:22

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 11:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-03 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		5	2.50	2.50	141.2	mg/L	D

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-02-220510

22E0178-03RE2 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 08:22

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 03:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-03RE2 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	20	2.00	2.00	74.4	mg/L	D

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Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-02-220510

22E0178-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 08:22

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-04 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	6.00	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	21.8	ug/L	D

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-21-220510

22E0178-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 09:09

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 15:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-05 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.40	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-21-220510

22E0178-05 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 09:09

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 12:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-05 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5210	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*78.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-21-220510

22E0178-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 09:09

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-05 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	14.0	ug/L	D
Copper	7440-50-8	2	0.346	1.00	1.07	ug/L	D

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-21-220510

22E0178-05 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 09:09

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 00:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-05 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.251	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-21-220510

22E0178-05 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 09:09

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 11:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-05 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	16.41	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-21-220510

22E0178-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 09:09

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-06 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	12.4	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-23-220510

22E0178-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 09:59

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 16:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-07 A

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	1.14	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.36	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*93.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-23-220510

22E0178-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 09:59

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-07 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	17.7	ug/L	D
Copper	7440-50-8	2	0.346	1.00	ND	ug/L	U

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-23-220510

22E0178-07 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 09:59

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 00:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-07 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.686	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-23-220510

22E0178-07 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 09:59

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 11:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-07 F

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	6.99	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-23-220510

22E0178-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 09:59

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-08 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	17.2	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-07-220510

22E0178-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 10:00

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 16:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-09 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.83	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.42	ug/L	
Trichloroethene	79-01-6	1	0.20	0.21	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*104*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*93.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-07-220510

22E0178-09 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 10:00

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 12:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-09 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3790	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*88.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-07-220510

22E0178-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 10:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-09 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	3.39	ug/L	
Copper	7440-50-8	1	0.173	0.500	1.65	ug/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-07-220510

22E0178-09 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 10:00

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 00:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-09 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	5.17	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-07-220510

22E0178-09 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 10:00

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 12:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-09 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	8.92	mg/L	

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-07-220510

22E0178-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 10:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-10 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	3.06	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-20-220510

22E0178-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 10:35

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 16:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-11 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.53	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-20-220510

22E0178-11 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 10:35

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 13:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-11 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5060	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*82.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-20-220510

22E0178-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 10:35

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-11 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	25.9	ug/L	D
Copper	7440-50-8	2	0.346	1.00	ND	ug/L	U

Analytical Resources, LLC
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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-20-220510

22E0178-11 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 10:35

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 01:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-11 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-20-220510

22E0178-11 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 10:35

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 12:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-11 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	16.35	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-20-220510

22E0178-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 10:35

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-12 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	24.2	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-09-220510

22E0178-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 11:10

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 17:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-13 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.90	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*91.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-09-220510

22E0178-13 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 11:10

Instrument: FID6 Analyst: PB — Analyzed: 05/17/2022 14:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-13 B

Preparation Batch: BKE0445 — Sample Size: 10 mL

Prepared: 05/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5590	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*100*	*%*	

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-09-220510

22E0178-13 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 11:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-13 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	2.43	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.193	ug/L	J

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-09-220510

22E0178-13 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 11:10

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 02:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-13 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	2.23	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-09-220510

22E0178-13 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 11:10

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 12:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-13 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	6.61	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-09-220510

22E0178-14 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 11:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:33

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-14 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	1.85	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-22-220510

22E0178-15 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 11:23

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 17:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-15 A

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	2.42	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	2.91	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*108*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*86.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
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BDC-05-22-220510

22E0178-15 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 11:23

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 22:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-15 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	10	0.373	2.00	56.9	ug/L	D
Copper	7440-50-8	10	1.73	5.00	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-22-220510

22E0178-15 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 11:23

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 02:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-15 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.127	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-22-220510

22E0178-15 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 11:23

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 13:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-15 F

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	12.86	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-22-220510

22E0178-16 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 11:23

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 22:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-16 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	10	0.373	2.00	52.3	ug/L	D
Copper, Dissolved	7440-50-8	10	1.73	5.00	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-17-220510

22E0178-17 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 12:05

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 17:58

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-17 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.40	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-17-220510

22E0178-17 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 12:05

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 12:58

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-17 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7650	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*69.1*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
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BDC-05-17-220510

22E0178-17 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 12:05

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 22:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-17 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	5	0.187	1.00	32.0	ug/L	D
Copper	7440-50-8	5	0.865	2.50	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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22E0178-17 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 12:05

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 02:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-17 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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BDC-05-17-220510

22E0178-17 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 12:05

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 14:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-17 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		5	2.50	2.50	21.71	mg/L	D

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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-17-220510

22E0178-18 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 12:05

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 22:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-18 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	5	0.187	1.00	32.7	ug/L	D
Copper, Dissolved	7440-50-8	5	0.865	2.50	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-16-220510

22E0178-19 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 12:53

Instrument: NT2 Analyst: LH — Analyzed: 05/12/2022 18:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-19 C

Preparation Batch: BKE0310 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.36	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-16-220510

22E0178-19 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 12:53

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 13:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-19 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5460	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*75.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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22E0178-19 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 12:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-19 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	26.5	ug/L	D
Copper	7440-50-8	2	0.346	1.00	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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22E0178-19 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 12:53

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 03:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-19 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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BDC-05-16-220510

22E0178-19 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 12:53

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 14:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-19 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	15.56	mg/L	

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BDC-05-16-220510

22E0178-20 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 12:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-20 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	25.7	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-10-220510

22E0178-21 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 12:20

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 13:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-21 C

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.55	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*98.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-10-220510

22E0178-21 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 12:20

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 14:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-21 B

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	1360	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*78.0*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
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BDC-05-10-220510

22E0178-21 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 12:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-21 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	6.99	ug/L	
Copper	7440-50-8	1	0.173	0.500	2.70	ug/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-10-220510

22E0178-21 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 12:20

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 03:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-21 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-10-220510

22E0178-21 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 12:20

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 15:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-21 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.58	mg/L	

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-10-220510

22E0178-22 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 12:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-22 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	6.56	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-15-220510

22E0178-23 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 13:37

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 14:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-23 C

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.23	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*97.6*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-15-220510

22E0178-23 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 13:37

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 15:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-23 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	6120	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*71.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-15-220510

22E0178-23 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 13:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 22:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-23 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	5	0.187	1.00	56.0	ug/L	D
Copper	7440-50-8	5	0.865	2.50	ND	ug/L	U

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-15-220510

22E0178-23 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 13:37

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 03:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-23 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.294	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-15-220510

22E0178-23 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 13:37

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 15:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-23 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	18.48	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-15-220510

22E0178-24 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 13:37

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/26/2022 23:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-24 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	5	0.187	1.00	48.9	ug/L	D
Copper, Dissolved	7440-50-8	5	0.865	2.50	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-11-220510

22E0178-25 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 13:38

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 14:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-25 C

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.64	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*95.3*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-11-220510

22E0178-25 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 13:38

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 16:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-25 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	4790	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*66.5*	*%*	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-11-220510

22E0178-25 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 13:38

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-25 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	6.65	ug/L	
Copper	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-11-220510

22E0178-25 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 13:38

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 04:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-25 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-11-220510

22E0178-25 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 13:38

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 16:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-25 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	8.10	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-11-220510

22E0178-26 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 13:38

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-26 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	6.55	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-24-220510

22E0178-27 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 14:43

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 15:03

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-27 C

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.38	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-24-220510

22E0178-27 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 14:43

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 16:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-27 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7440	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*75.7*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-24-220510

22E0178-27 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 14:43

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-27 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	6.04	ug/L	
Copper	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-24-220510

22E0178-27 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 14:43

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 04:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-27 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.130	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-24-220510

22E0178-27 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 14:43

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 16:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-27 G

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.34	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-24-220510

22E0178-28 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 14:43

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 01:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-28 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	6.05	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	0.353	ug/L	J

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-03-220510

22E0178-29 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 14:54

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 15:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-29 C

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.35	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*103*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*95.6*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-03-220510

22E0178-29 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 14:54

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 16:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-29 A

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	4170	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*75.3*	*%*	

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-03-220510

22E0178-29 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 14:54

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 01:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-29 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	8.97	ug/L	
Copper	7440-50-8	1	0.173	0.500	29.5	ug/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-03-220510

22E0178-29 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 14:54

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 16:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-29 H

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	19.59	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-03-220510

22E0178-29RE2 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 14:54

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 03:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-29RE2 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	30.2	mg/L	D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-03-220510

22E0178-30 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 14:54

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 01:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-30 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	7.21	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	11.6	ug/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-08-220510

22E0178-31 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 15:33

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 15:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-31 A

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.22	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*94.8*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-08-220510

22E0178-31 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 15:33

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 01:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-31 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	7.63	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.671	ug/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-08-220510

22E0178-31 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 15:33

Instrument: IC930 Analyst: BF — Analyzed: 05/12/2022 05:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-31 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-08-220510

22E0178-31 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 15:33

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 17:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-31 F

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	6.71	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-08-220510

22E0178-32 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 15:33

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 01:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-32 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	7.42	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-04-220510

22E0178-33 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/10/2022 16:08

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 16:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-33 A

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.47	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.91	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*96.8*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-04-220510

22E0178-33 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/10/2022 16:08

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 17:29

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0178-33 B

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	4300	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*93.7*	*%*	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-04-220510

22E0178-33 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 16:08

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-33 E 01

Preparation Batch: BKE0623 — Sample Size: 25 mL

Prepared: 05/24/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	15.9	ug/L	D
Copper	7440-50-8	2	0.346	1.00	10.3	ug/L	D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-04-220510

22E0178-33 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/10/2022 16:08

Instrument: IC930 Analyst: BF — Analyzed: 05/11/2022 20:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-33 D

Preparation Batch: BKE0304 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	1.82	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-04-220510

22E0178-33 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/10/2022 16:08

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 17:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0178-33 F

Preparation Batch: BKE0597 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	32.16	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

BDC-05-04-220510

22E0178-34 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/10/2022 06:08

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 00:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0178-34 A 01

Preparation Batch: BKE0666 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	16.3	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	0.408	ug/L	J, D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0310 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0310-BLK2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 09:36						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.26		ug/L	*5.00*		*105*	*80-129*			
Surrogate: Toluene-d8	4.73		ug/L	*5.00*		*94.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.61		ug/L	*5.00*		*92.3*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.05		ug/L	*5.00*		*101*	*80-120*			
LCS (BKE0310-BS2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:14						
Vinyl Chloride	9.53	0.20	ug/L	10.0		95.3	66-133			
cis-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100	80-121			
Trichloroethene	9.71	0.20	ug/L	10.0		97.1	80-120			
Tetrachloroethene	9.67	0.20	ug/L	10.0		96.7	80-120			
Surrogate: 1,2-Dichloroethane-d4	4.97		ug/L	*5.00*		*99.4*	*80-129*			
Surrogate: Toluene-d8	5.04		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.27		ug/L	*5.00*		*105*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.95		ug/L	*5.00*		*99.0*	*80-120*			
LCS Dup (BKE0310-BSD2)				Prepared: 12-May-2022 Analyzed: 12-May-2022 08:55						
Vinyl Chloride	9.43	0.20	ug/L	10.0		94.3	66-133	1.06	30	
cis-1,2-Dichloroethene	9.95	0.20	ug/L	10.0		99.5	80-121	0.88	30	
Trichloroethene	10.1	0.20	ug/L	10.0		101	80-120	3.74	30	
Tetrachloroethene	9.48	0.20	ug/L	10.0		94.8	80-120	2.07	30	
Surrogate: 1,2-Dichloroethane-d4	4.73		ug/L	*5.00*		*94.7*	*80-129*			
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.21		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0321-BLK1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 11:39						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.05		ug/L	*5.00*		*101*	*80-129*			
Surrogate: Toluene-d8	5.11		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.19		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.89		ug/L	*5.00*		*97.9*	*80-120*			
LCS (BKE0321-BS1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:08						
Vinyl Chloride	9.64	0.20	ug/L	10.0		96.4	66-133			
cis-1,2-Dichloroethene	9.64	0.20	ug/L	10.0		96.4	80-121			
Trichloroethene	9.71	0.20	ug/L	10.0		97.1	80-120			
Tetrachloroethene	9.68	0.20	ug/L	10.0		96.8	80-120			
Surrogate: 1,2-Dichloroethane-d4	4.93		ug/L	*5.00*		*98.5*	*80-129*			
Surrogate: Toluene-d8	5.09		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.14		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.85		ug/L	*5.00*		*96.9*	*80-120*			
LCS Dup (BKE0321-BSD1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:31						
Vinyl Chloride	9.23	0.20	ug/L	10.0		92.3	66-133	4.42	30	
cis-1,2-Dichloroethene	9.52	0.20	ug/L	10.0		95.2	80-121	1.19	30	
Trichloroethene	9.45	0.20	ug/L	10.0		94.5	80-120	2.72	30	
Tetrachloroethene	8.98	0.20	ug/L	10.0		89.8	80-120	7.45	30	
Surrogate: 1,2-Dichloroethane-d4	4.98		ug/L	*5.00*		*99.6*	*80-129*			
Surrogate: Toluene-d8	5.29		ug/L	*5.00*		*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.72		ug/L	*5.00*		*94.5*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKE0307 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0307-BLK1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 07:13						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1340		ug/L	*1800*		*74.3*	*62-122*			
LCS (BKE0307-BS1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 06:38						
Methane	559	0.65	ug/L	656		85.2	80-120			
Ethane	1130	1.23	ug/L	1230		91.6	80-120			
Ethene	965	1.14	ug/L	1150		83.9	80-120			
Acetylene	920	1.06	ug/L	1060		86.8	73-123			
Surrogate: Propane	1280		ug/L	*1800*		*70.9*	*62-122*			
LCS Dup (BKE0307-BSD1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 06:55						
Methane	592	0.65	ug/L	656		90.3	80-120	5.79	30	
Ethane	1200	1.23	ug/L	1230		97.5	80-120	6.25	30	
Ethene	1030	1.14	ug/L	1150		89.3	80-120	6.28	30	
Acetylene	1000	1.06	ug/L	1060		94.5	73-123	8.49	30	
Surrogate: Propane	1370		ug/L	*1800*		*76.1*	*62-122*			
Duplicate (BKE0307-DUP2)	**Source: 22E0178-01**			Prepared: 12-May-2022 Analyzed: 12-May-2022 17:11						
Methane	224	0.65	ug/L		236			5.31	30	
Ethane	ND	1.23	ug/L		ND					U
Ethene	ND	1.14	ug/L		ND					U
Acetylene	ND	1.06	ug/L		ND					U
Surrogate: Propane	1540		ug/L	*1800*	*1380*	*85.6*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKE0445 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0445-BLK1)				Prepared: 17-May-2022 Analyzed: 17-May-2022 12:52						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1530		ug/L	*1800*		*84.9*	*62-122*			
LCS (BKE0445-BS1)				Prepared: 17-May-2022 Analyzed: 17-May-2022 12:16						
Methane	688	0.65	ug/L	656		105	80-120			
Ethane	1370	1.23	ug/L	1230		112	80-120			
Ethene	1170	1.14	ug/L	1150		102	80-120			
Acetylene	1150	1.06	ug/L	1060		109	73-123			E
Surrogate: Propane	1960		ug/L	*1800*		*109*	*62-122*			
LCS Dup (BKE0445-BSD1)				Prepared: 17-May-2022 Analyzed: 17-May-2022 12:34						
Methane	549	0.65	ug/L	656		83.8	80-120	22.40	30	
Ethane	1100	1.23	ug/L	1230		89.7	80-120	21.80	30	
Ethene	945	1.14	ug/L	1150		82.1	80-120	21.60	30	
Acetylene	922	1.06	ug/L	1060		86.9	73-123	22.30	30	
Surrogate: Propane	1510		ug/L	*1800*		*83.7*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKE0623 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0623-BLK1)					Prepared: 24-May-2022 Analyzed: 26-May-2022 20:49							
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
Copper	65	ND	0.350	0.500	ug/L							U
LCS (BKE0623-BS1)					Prepared: 24-May-2022 Analyzed: 26-May-2022 20:53							
Arsenic	75a	25.2	0.0373	0.200	ug/L	25.0		101	80-120			
Copper	63	24.6	0.173	0.500	ug/L	25.0		98.5	80-120			
Copper	65	24.7	0.350	0.500	ug/L	25.0		98.7	80-120			
Duplicate (BKE0623-DUP1)			**Source: 22E0178-01**		Prepared: 24-May-2022 Analyzed: 26-May-2022 22:20							
Arsenic	75a	3.45	0.0373	0.200	ug/L		3.55			2.69	20	
Copper	63	0.840	0.173	0.500	ug/L		0.836			0.48	20	
Matrix Spike (BKE0623-MS1)			**Source: 22E0178-01**		Prepared: 24-May-2022 Analyzed: 26-May-2022 22:24							
Arsenic	75a	28.4	0.0373	0.200	ug/L	25.0	3.55	99.4	75-125			
Copper	63	24.6	0.173	0.500	ug/L	25.0	0.836	95.0	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BKE0666 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0666-BLK1)					Prepared: 25-May-2022 Analyzed: 26-May-2022 21:54							
Arsenic, Dissolved	75a	ND	0.0373	0.200	ug/L							U
Copper, Dissolved	63	ND	0.173	0.500	ug/L							U
Copper, Dissolved	65	ND	0.350	0.500	ug/L							U
LCS (BKE0666-BS1)					Prepared: 25-May-2022 Analyzed: 26-May-2022 21:58							
Arsenic, Dissolved	75a	24.9	0.0373	0.200	ug/L	25.0		99.7	80-120			
Copper, Dissolved	63	24.2	0.173	0.500	ug/L	25.0		96.8	80-120			
Copper, Dissolved	65	24.1	0.350	0.500	ug/L	25.0		96.3	80-120			
Duplicate (BKE0666-DUP1)			**Source: 22E0178-02**		Prepared: 25-May-2022 Analyzed: 26-May-2022 22:05							
Arsenic, Dissolved	75a	1.04	0.0373	0.200	ug/L		1.07			2.18	20	
Copper, Dissolved	63	0.265	0.173	0.500	ug/L		0.281			5.86	20	J
Matrix Spike (BKE0666-MS1)			**Source: 22E0178-02**		Prepared: 25-May-2022 Analyzed: 26-May-2022 22:08							
Arsenic, Dissolved	75a	25.9	0.0373	0.200	ug/L	25.0	1.07	99.5	75-125			
Copper, Dissolved	63	24.3	0.173	0.500	ug/L	25.0	0.281	96.2	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKE0304 - No Prep Wet Chem

Instrument: IC930 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0304-BLK1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 22:06							
Nitrate-N	ND	0.100	0.100	mg/L							U
Nitrite-N	ND	0.100	0.100	mg/L							U
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKE0304-BS1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 22:26							
Nitrate-N	5.19	0.100	0.100	mg/L	5.00		104	90-110			
Nitrite-N	5.12	0.100	0.100	mg/L	5.00		102	90-110			
Sulfate	5.01	0.100	0.100	mg/L	5.00		100	90-110			
Duplicate (BKE0304-DUP1)		**Source: 22E0178-01**		Prepared: 11-May-2022 Analyzed: 11-May-2022 23:06							
Nitrate-N	ND	0.100	0.100	mg/L		ND					U
Nitrite-N	ND	0.100	0.100	mg/L		ND					U
Sulfate	7.72	0.100	0.100	mg/L		7.74			0.17	20	
Matrix Spike (BKE0304-MS1)		**Source: 22E0178-01**		Prepared: 11-May-2022 Analyzed: 11-May-2022 23:26							
Nitrate-N	2.12	0.100	0.100	mg/L	2.00	ND	106	75-125			
Nitrite-N	1.78	0.100	0.100	mg/L	2.04	ND	87.2	75-125			
Sulfate	9.88	0.100	0.100	mg/L	2.01	7.74	107	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKE0597 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0597-BLK1)				Prepared: 23-May-2022 Analyzed: 24-May-2022 07:07							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKE0597-BS1)				Prepared: 23-May-2022 Analyzed: 24-May-2022 07:34							
Total Organic Carbon	19.52	0.50	0.50	mg/L	20.00		97.6	90-110			
Duplicate (BKE0597-DUP1)		**Source: 22E0178-01**		Prepared: 23-May-2022 Analyzed: 24-May-2022 09:13							
Total Organic Carbon	1.39	0.50	0.50	mg/L		1.44			3.40	20	
Matrix Spike (BKE0597-MS2)		**Source: 22E0178-01**		Prepared: 23-May-2022 Analyzed: 31-May-2022 22:22							
Total Organic Carbon	21.93	0.50	0.50	mg/L	19.99	1.44	103	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 17:43

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

16 June 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22E0195	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22E0195

LANDAU ASSOCIATES Chain-of-Custody Record 2.0, 6.1°C

[X] North Seattle (206) 631-8660 [ ] Spokane (509) 327-9737
[ ] Tacoma (253) 926-2493 [ ] Portland (503) 542-1080
[ ] Olympia (360) 791-3178 [ ]

Date 5/16/22
Page 1 of 1

Turnaround Time: Standard X Accelerated

Project Name DC Regional GW
Project No. 001521.002.031.032
Project Location/Event SWMU-17 / Mar 2022
Sampler's Name Armando Huerta / Joe Marin
Project Contact Chris Kimmel / Jen Parsons
Send Results To Chris Kimmel / Jen Parsons

Special Handling Requirements:

Shipment Method: DROP OFF
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC (8260D) Unpreserved	Ammonia (RSK SOP-175 Mod)	TOC (SM 5310C)	Sulfate (E300.0)	Nitrate (E300.0)	T. and D. Arsenic (6020C)	Observations/Comments
Trip Blanks -	-	-	AQ	4	X	X					
BDC-05-14-220511	5/11/22	717	AQ	4	X	X	X	X		X	
BDC-05-13-220511	5/11/22	811	AQ	4	X	X	X	X		X	
BDC-05-19-220511	5/11/22	853	AQ	4	X	X	X	X		X	
BDC-05-12-220511	5/11/22	931	AQ	4	X	X	X	X		X	
BDC-DUP3-220511	5/11/22	933	AQ	4	X	X	X	X		X	
BDC-05-05-220511	5/11/22	1055	AQ	2	X		X	X		X	

Allow water samples to settle, collect aliquot from clear portion [ ]

NWTPH-Dx - Acid wash cleanup [ ]
- Silica gel cleanup [ ]

X Dissolved metal samples were field filtered

Other * PCE, TCE, cDCE, VC

• 200.8 ICP-MS

4 Vocas w/ HCl

[ ] ~~48 hour hold~~ for nitrate

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Armando Huerta	Printed Name DUNNIGAN	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 5/11/22 Time 1120	Date 05/11/22 Time 1120	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Trip Blanks	22E0195-01	Water	11-May-2022 07:27	11-May-2022 11:20
BDC-05-14-220511	22E0195-02	Water	11-May-2022 07:27	11-May-2022 11:20
BDC-05-14-220511	22E0195-03	Water	11-May-2022 07:27	11-May-2022 11:20
BDC-05-13-220511	22E0195-04	Water	11-May-2022 08:11	11-May-2022 11:20
BDC-05-13-220511	22E0195-05	Water	11-May-2022 08:11	11-May-2022 11:20
BDC-05-19-220511	22E0195-06	Water	11-May-2022 08:53	11-May-2022 11:20
BDC-05-19-220511	22E0195-07	Water	11-May-2022 08:53	11-May-2022 11:20
BDC-05-12-220511	22E0195-08	Water	11-May-2022 09:31	11-May-2022 11:20
BDC-05-12-220511	22E0195-09	Water	11-May-2022 09:31	11-May-2022 11:20
BDC-DUP3-220511	22E0195-10	Water	11-May-2022 09:33	11-May-2022 11:20
BDC-DUP3-220511	22E0195-11	Water	11-May-2022 09:33	11-May-2022 11:20
BDC-05-05-220511	22E0195-12	Water	11-May-2022 10:55	11-May-2022 11:20
BDC-05-05-220511	22E0195-13	Water	11-May-2022 10:55	11-May-2022 11:20

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Wet Chemistry

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: LCI / Boeing Project Name: DC Key

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22E0195 Tracking No: _____ NA

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time _____ 2.0°C 5.0°C

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 256

Cooler Accepted by: _____ Date: 05/11/22 Time: _____

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet Ice) (Gel Packs) (Baggies) Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	5/5/2022	

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: [signature] Date: 05/12/2022 Time: 1235 Labels checked by: SLF

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

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

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

WORK ORDER

22E0195

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

22E0195-08 B	VOA Vial, Clear, 40 mL	
22E0195-08 C	VOA Vial, Clear, 40 mL	
22E0195-08 D	VOA Vial, Clear, 40 mL, HCL	
22E0195-08 E	VOA Vial, Clear, 40 mL, HCL	
22E0195-08 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
22E0195-08 G	HDPE NM, 1000 mL	
22E0195-08 H	HDPE NM, 1000 mL, 1:1 HNO3	<2 pass
22E0195-09 H	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	<2 pass
22E0195-10 A	VOA Vial, Clear, 40 mL	
22E0195-10 B	VOA Vial, Clear, 40 mL	
22E0195-10 C	VOA Vial, Clear, 40 mL	
22E0195-10 D	VOA Vial, Clear, 40 mL, HCL	
22E0195-10 E	VOA Vial, Clear, 40 mL, HCL	
22E0195-10 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
22E0195-10 G	HDPE NM, 1000 mL	
22E0195-10 H	HDPE NM, 1000 mL, 1:1 HNO3	<2 pass
22E0195-11 H	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	<2 pass
22E0195-12 A	VOA Vial, Clear, 40 mL	
22E0195-12 B	VOA Vial, Clear, 40 mL	
22E0195-12 C	VOA Vial, Clear, 40 mL	
22E0195-12 D	VOA Vial, Clear, 40 mL, HCL	
22E0195-12 E	VOA Vial, Clear, 40 mL, HCL	
22E0195-12 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
22E0195-12 G	HDPE NM, 1000 mL	
22E0195-12 H	HDPE NM, 1000 mL, 1:1 HNO3	<2 pass
22E0195-13 H	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	<2 pass

Preservation Confirmed By

05/12/2022
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 5/12/2022 12:56:00PM

WORK ORDER

22E0195

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH
22E0195-01 A	VOA Vial, Clear, 40 mL, HCL	
22E0195-01 B	VOA Vial, Clear, 40 mL, HCL	
22E0195-01 C	VOA Vial, Clear, 40 mL, HCL	
22E0195-01 D	VOA Vial, Clear, 40 mL, HCL	
22E0195-02 A	VOA Vial, Clear, 40 mL	
22E0195-02 B	VOA Vial, Clear, 40 mL	
22E0195-02 C	VOA Vial, Clear, 40 mL	
22E0195-02 D	VOA Vial, Clear, 40 mL, HCL	
22E0195-02 E	VOA Vial, Clear, 40 mL, HCL	
22E0195-02 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
22E0195-02 G	HDPE NM, 1000 mL	
22E0195-02 H	HDPE NM, 1000 mL, 1:1 HNO3	<2 pass
22E0195-03 H	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	<2 pass
22E0195-04 A	VOA Vial, Clear, 40 mL	
22E0195-04 B	VOA Vial, Clear, 40 mL	
22E0195-04 C	VOA Vial, Clear, 40 mL	
22E0195-04 D	VOA Vial, Clear, 40 mL, HCL	
22E0195-04 E	VOA Vial, Clear, 40 mL, HCL	
22E0195-04 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
22E0195-04 G	HDPE NM, 1000 mL	
22E0195-04 H	HDPE NM, 1000 mL, 1:1 HNO3	<2 pass
22E0195-05 H	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	<2 pass
22E0195-06 A	VOA Vial, Clear, 40 mL	
22E0195-06 B	VOA Vial, Clear, 40 mL	
22E0195-06 C	VOA Vial, Clear, 40 mL	
22E0195-06 D	VOA Vial, Clear, 40 mL, HCL	
22E0195-06 E	VOA Vial, Clear, 40 mL, HCL	
22E0195-06 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 pass
22E0195-06 G	HDPE NM, 1000 mL	
22E0195-06 H	HDPE NM, 1000 mL, 1:1 HNO3	<2 pass
22E0195-07 H	HDPE NM, 1000 mL, 1:1 HNO3 (FF)	<2 pass
22E0195-08 A	VOA Vial, Clear, 40 mL	

Reviewed By Date

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Trip Blanks

22E0195-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/11/2022 07:27
Instrument: NT2 Analyst: PKC — Analyzed: 05/13/2022 13:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-01 C
Preparation Batch: BKE0349 — Sample Size: 10 mL
Prepared: 05/13/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*96.8*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Trip Blanks

22E0195-01 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/11/2022 07:27
Instrument: FID6 Analyst: PB — Analyzed: 05/17/2022 15:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-01 B
Preparation Batch: BKE0445 — Sample Size: 10 mL
Prepared: 05/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*105*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-14-220511

22E0195-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/11/2022 07:27

Instrument: NT2 Analyst: PKC — Analyzed: 05/13/2022 16:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-02 B

Preparation Batch: BKE0349 — Sample Size: 10 mL

Prepared: 05/13/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.29	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*113*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*92.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*107*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-14-220511

22E0195-02 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/11/2022 07:27

Instrument: FID6 Analyst: PB — Analyzed: 05/17/2022 15:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-02 D

Preparation Batch: BKE0445 — Sample Size: 10 mL

Prepared: 05/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	6610	ug/L	
Ethane	74-84-0	1	1.23	2.64	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*92.6*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-14-220511

22E0195-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 07:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 03:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-02 H 01

Preparation Batch: BKE0670 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	37.5	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.284	ug/L	J

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-14-220511

22E0195-02 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/11/2022 07:27

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 02:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-02 F

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	18.63	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-14-220511

22E0195-02RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/11/2022 07:27

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 01:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-02RE1 G

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	1.30	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-14-220511

22E0195-03 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 07:27

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 03:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-03 H 01

Preparation Batch: BKE0667 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	36.8	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-13-220511

22E0195-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/11/2022 08:11

Instrument: NT2 Analyst: PKC — Analyzed: 05/13/2022 16:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-04 B

Preparation Batch: BKE0349 — Sample Size: 10 mL

Prepared: 05/13/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.31	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*115*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-13-220511

22E0195-04 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/11/2022 08:11

Instrument: FID6 Analyst: PB — Analyzed: 05/17/2022 16:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-04 D

Preparation Batch: BKE0445 — Sample Size: 10 mL

Prepared: 05/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	6870	ug/L	
Ethane	74-84-0	1	1.23	3.06	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*98.2*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-13-220511

22E0195-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 08:11

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 02:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-04 H 01

Preparation Batch: BKE0670 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	9.59	ug/L	
Copper	7440-50-8	1	0.173	0.500	2.33	ug/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-13-220511

22E0195-04 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/11/2022 08:11

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 04:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-04 F

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	8.81	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-13-220511

22E0195-04RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/11/2022 08:11

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 01:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-04RE1 G

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-13-220511

22E0195-05 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 08:11

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 03:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-05 H 01

Preparation Batch: BKE0667 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	9.50	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-19-220511

22E0195-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/11/2022 08:53

Instrument: NT2 Analyst: PKC — Analyzed: 05/13/2022 17:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-06 B

Preparation Batch: BKE0349 — Sample Size: 10 mL

Prepared: 05/13/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.21	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*106*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-19-220511

22E0195-06 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/11/2022 08:53

Instrument: FID6 Analyst: PB — Analyzed: 05/17/2022 16:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-06 D

Preparation Batch: BKE0445 — Sample Size: 10 mL

Prepared: 05/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	8280	ug/L	
Ethane	74-84-0	1	1.23	4.11	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*84.6*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-19-220511

22E0195-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 08:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 02:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-06 H 01

Preparation Batch: BKE0670 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	12.3	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.312	ug/L	J

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-19-220511

22E0195-06 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/11/2022 08:53

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 04:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-06 F

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	11.58	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-19-220511

22E0195-06RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/11/2022 08:53

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 01:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-06RE1 G

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-19-220511

22E0195-07 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 08:53

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 03:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-07 H 01

Preparation Batch: BKE0667 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	9.56	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-12-220511

22E0195-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/11/2022 09:31

Instrument: NT2 Analyst: PKC — Analyzed: 05/13/2022 17:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-08 B

Preparation Batch: BKE0349 — Sample Size: 10 mL

Prepared: 05/13/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*86.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-12-220511

22E0195-08 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/11/2022 09:31

Instrument: FID6 Analyst: PB — Analyzed: 05/17/2022 16:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-08 D

Preparation Batch: BKE0445 — Sample Size: 10 mL

Prepared: 05/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7510	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*96.5*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-12-220511

22E0195-08 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 09:31

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 02:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-08 H 01

Preparation Batch: BKE0670 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	6.07	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.272	ug/L	J

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-12-220511

22E0195-08 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/11/2022 09:31

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 04:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-08 F

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.13	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
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BDC-05-12-220511

22E0195-08RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/11/2022 09:31

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 02:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-08RE1 G

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-12-220511

22E0195-09 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 09:31

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 03:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-09 H 01

Preparation Batch: BKE0667 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	5.49	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	3.18	ug/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-12-220511

22E0195-09RE1 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 09:31

Instrument: ICPMS1 Analyst: MCB — Analyzed: 06/10/2022 21:29

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-09RE1 H 02

Preparation Batch: BKF0270 — Sample Size: 25 mL

Prepared: 06/10/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-DUP3-220511

22E0195-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/11/2022 09:33

Instrument: NT2 Analyst: PKC — Analyzed: 05/13/2022 17:51

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-10 B

Preparation Batch: BKE0349 — Sample Size: 10 mL

Prepared: 05/13/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*111*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*107*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
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BDC-DUP3-220511

22E0195-10 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/11/2022 09:33

Instrument: FID6 Analyst: PB — Analyzed: 05/17/2022 17:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-10 D

Preparation Batch: BKE0445 — Sample Size: 10 mL

Prepared: 05/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	6450	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*93.3*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

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22E0195-10 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 09:33

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 02:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-10 H 01

Preparation Batch: BKE0670 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	5.86	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.179	ug/L	J

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-DUP3-220511

22E0195-10 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/11/2022 09:33

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 05:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-10 F

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	6.92	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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22E0195-10RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/11/2022 09:33

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 02:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-10RE1 G

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-DUP3-220511

22E0195-11 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 09:33

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 03:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-11 H 01

Preparation Batch: BKE0667 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	5.24	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-05-220511

22E0195-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/11/2022 10:55

Instrument: NT2 Analyst: PKC — Analyzed: 05/13/2022 18:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0195-12 A

Preparation Batch: BKE0349 — Sample Size: 10 mL

Prepared: 05/13/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.51	ug/L	
Tetrachloroethene	127-18-4	1	0.20	0.34	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*113*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*92.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*88.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-05-220511

22E0195-12 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 10:55

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 02:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-12 H 01

Preparation Batch: BKE0670 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	0.559	ug/L	
Copper	7440-50-8	1	0.173	0.500	2.20	ug/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

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22E0195-12 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/11/2022 10:55

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/24/2022 05:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-12 F

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	2.30	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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22E0195-12RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/11/2022 10:55

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 02:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0195-12RE1 G

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	30.8	mg/L	D

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

BDC-05-05-220511

22E0195-13 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 05/11/2022 10:55

Instrument: ICPMS1 Analyst: MCB — Analyzed: 05/27/2022 03:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 22E0195-13 H 01

Preparation Batch: BKE0667 — Sample Size: 25 mL

Prepared: 05/25/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	0.377	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	1.84	ug/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0349 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0349-BLK1)				Prepared: 13-May-2022 Analyzed: 13-May-2022 13:28						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.01		ug/L	*5.00*		*100*	*80-129*			
Surrogate: Toluene-d8	4.75		ug/L	*5.00*		*95.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.74		ug/L	*5.00*		*94.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.30		ug/L	*5.00*		*106*	*80-120*			
LCS (BKE0349-BS1)				Prepared: 13-May-2022 Analyzed: 13-May-2022 11:23						
Vinyl Chloride	9.01	0.20	ug/L	10.0		90.1	66-133			
cis-1,2-Dichloroethene	9.48	0.20	ug/L	10.0		94.8	80-121			
Trichloroethene	9.32	0.20	ug/L	10.0		93.2	80-120			
Tetrachloroethene	9.08	0.20	ug/L	10.0		90.8	80-120			
Surrogate: 1,2-Dichloroethane-d4	4.66		ug/L	*5.00*		*93.3*	*80-129*			
Surrogate: Toluene-d8	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.19		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.86		ug/L	*5.00*		*97.2*	*80-120*			
LCS Dup (BKE0349-BSD1)				Prepared: 13-May-2022 Analyzed: 13-May-2022 12:05						
Vinyl Chloride	8.89	0.20	ug/L	10.0		88.9	66-133	1.35	30	
cis-1,2-Dichloroethene	9.18	0.20	ug/L	10.0		91.8	80-121	3.26	30	
Trichloroethene	8.98	0.20	ug/L	10.0		89.8	80-120	3.77	30	
Tetrachloroethene	8.64	0.20	ug/L	10.0		86.4	80-120	4.94	30	
Surrogate: 1,2-Dichloroethane-d4	4.65		ug/L	*5.00*		*93.1*	*80-129*			
Surrogate: Toluene-d8	4.96		ug/L	*5.00*		*99.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.34		ug/L	*5.00*		*107*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.95		ug/L	*5.00*		*99.1*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKE0445 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0445-BLK1)				Prepared: 17-May-2022 Analyzed: 17-May-2022 12:52						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1530		ug/L	*1800*		*84.9*	*62-122*			
LCS (BKE0445-BS1)				Prepared: 17-May-2022 Analyzed: 17-May-2022 12:16						
Methane	688	0.65	ug/L	656		105	80-120			
Ethane	1370	1.23	ug/L	1230		112	80-120			
Ethene	1170	1.14	ug/L	1150		102	80-120			
Acetylene	1150	1.06	ug/L	1060		109	73-123			E
Surrogate: Propane	1960		ug/L	*1800*		*109*	*62-122*			
LCS Dup (BKE0445-BSD1)				Prepared: 17-May-2022 Analyzed: 17-May-2022 12:34						
Methane	549	0.65	ug/L	656		83.8	80-120	22.40	30	
Ethane	1100	1.23	ug/L	1230		89.7	80-120	21.80	30	
Ethene	945	1.14	ug/L	1150		82.1	80-120	21.60	30	
Acetylene	922	1.06	ug/L	1060		86.9	73-123	22.30	30	
Surrogate: Propane	1510		ug/L	*1800*		*83.7*	*62-122*			
Duplicate (BKE0445-DUP1)	**Source: 22E0195-02**			Prepared: 17-May-2022 Analyzed: 17-May-2022 15:52						
Methane	7130	0.65	ug/L		6610			7.66	30	
Ethane	2.87	1.23	ug/L		2.64			8.49	30	
Ethene	ND	1.14	ug/L		ND					U
Acetylene	ND	1.06	ug/L		ND					U
Surrogate: Propane	1780		ug/L	*1800*	*1670*	*98.9*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKE0670 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0670-BLK1)					Prepared: 25-May-2022 Analyzed: 25-May-2022 17:47							
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
Copper	65	ND	0.350	0.500	ug/L							U
LCS (BKE0670-BS1)					Prepared: 25-May-2022 Analyzed: 25-May-2022 17:52							
Arsenic	75a	25.3	0.0373	0.200	ug/L	25.0		101	80-120			
Copper	63	26.1	0.173	0.500	ug/L	25.0		104	80-120			
Copper	65	26.4	0.350	0.500	ug/L	25.0		106	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BKE0667 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0667-BLK1)					Prepared: 25-May-2022 Analyzed: 25-May-2022 23:16							
Arsenic, Dissolved	75a	ND	0.0373	0.200	ug/L							U
Copper, Dissolved	63	ND	0.173	0.500	ug/L							U
Copper, Dissolved	65	ND	0.350	0.500	ug/L							U
LCS (BKE0667-BS1)					Prepared: 25-May-2022 Analyzed: 25-May-2022 23:20							
Arsenic, Dissolved	75a	25.0	0.0373	0.200	ug/L	25.0		99.8	80-120			
Copper, Dissolved	63	25.9	0.173	0.500	ug/L	25.0		104	80-120			
Copper, Dissolved	65	25.5	0.350	0.500	ug/L	25.0		102	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BKF0270 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0270-BLK1)					Prepared: 10-Jun-2022 Analyzed: 10-Jun-2022 19:59							
Copper, Dissolved	63	ND	0.173	0.500	ug/L							U
Copper, Dissolved	65	ND	0.350	0.500	ug/L							U
LCS (BKF0270-BS1)					Prepared: 10-Jun-2022 Analyzed: 10-Jun-2022 20:04							
Copper, Dissolved	63	26.3	0.173	0.500	ug/L	25.0		105	80-120			
Copper, Dissolved	65	26.6	0.350	0.500	ug/L	25.0		106	80-120			
Duplicate (BKF0270-DUP1)			**Source: 22E0195-09RE1**		Prepared: 10-Jun-2022 Analyzed: 10-Jun-2022 21:34							
Copper, Dissolved	63	ND	0.173	0.500	ug/L		ND					U
Matrix Spike (BKF0270-MS1)			**Source: 22E0195-09RE1**		Prepared: 10-Jun-2022 Analyzed: 10-Jun-2022 21:39							
Copper, Dissolved	63	25.3	0.173	0.500	ug/L	25.0	ND	101	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKE0333 - No Prep Wet Chem

Instrument: IC930 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0333-BLK2)				Prepared: 12-May-2022 Analyzed: 31-May-2022 19:42							
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKE0333-BS2)				Prepared: 12-May-2022 Analyzed: 31-May-2022 20:02							
Sulfate	5.17	0.100	0.100	mg/L	5.00		103	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKE0596 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0596-BLK1)	Prepared: 23-May-2022 Analyzed: 23-May-2022 19:21										
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKE0596-BS1)	Prepared: 23-May-2022 Analyzed: 23-May-2022 19:45										
Total Organic Carbon	19.68	0.50	0.50	mg/L	20.00		98.4	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	16-Jun-2022 12:24

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

06 December 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0179	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

LANDAU ASSOCIATES

Chain-of-Custody Record

22kd179

☐ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☒ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 11/8/22
Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name DC Regional GW Project No. 025217.002.032
Project Location/Event SWMU-17/ November 2022
Sampler's Name Samantha Lindstram
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com
paul.m.morin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements: _____
Shipment Method: drop off
Stored on ice: (Yes) No

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC - PCE, TCE, cDCE, VC (8260D) *	ANIEE (RSK SOP-175 MOD) +	TOC (SM5310C)	Total Arsenic (copper (200.8 (ICP-MS))	Dissolved Arsenic (copper (200.8 (ICP-MS))	Observations/Comments
~~BDC-DUP3-221108~~ SSL										
BDC-05-22-221108	11/8/22	~~1358~~ 1312 SSL	AQ	7	X		X	X	X	
BDC-05-12-221108	11/8/22	1358	AQ	9	X	X	X	X	X	
BDC-Dup3-221108	11/8/22	1408	AQ	9	X	X	X	X	X	
Tripblanks-221108	—	—	AQ	24 SSL	X	X				

Allow water samples to settle, collect aliquot from clear portion ☐
NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
☒ Dissolved metal samples were field filtered

Other *non-preserved (7-day)
+preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature Samantha Lindstram	Signature	Signature	Signature
Printed Name Samantha Lindstram	Printed Name Jacob Waite	Printed Name	Printed Name
Company Landau Associates	Company AR, LLC	Company	Company
Date 11/8/22 Time 1434	Date 11/08/22 Time 1434	Date Time	Date Time

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

10/2018

Landau Associates — Chain-of-Custody Record

North Seattle (206) 631-8660 | Tacoma (253) 926-2493 | Olympia (360) 791-3178 | Spokane (509) 327-9737 | Portland (503) 542-1080

Date 11/8/22 | Page 1 of 1 | Turnaround Time: Standard / Accelerated

Project Name: DC Regional GW | Project No.: 025217.002.032
Project Location/Event: SWMU-17 / November 2022
Sampler's Name: Samantha Lindstram
Project Contact: Chris Kimmel, Jen Parsons
Send Results To: Chris Kimmel, Jen Parsons, data@landauinc.com, paul.m.morin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements:
Shipment Method: drop off
Stored on ice: (Yes) No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC-PCE,TCE,cDCE,VC (8260D)*	AMEE (RSK SOP-175 Mod)+	TOC (SM5310C)	Total Arsenic (Copper) (200.8 or 6020B)	Dissolved Arsenic (Copper) (200.8 or 6020B)	Observations/Comments
~~BDC-05-22-221108~~		1312								
BDC-05-22-221108	11/8/22	~~1358~~	AQ	7	X		X	X	X	X Sulfate by E300.0
BDC-05-12-221108	11/8/22	1358	AQ	9	X	X	X	X	X	
BDC-Dup3-221108	11/8/22	1408	AQ	9	X	X	X	X	X	
TripblankS-221108	—	—	AQ	24 SSC	X	X				

[redacted]

__ Allow water samples to settle, collect aliquot from clear portion ☐
__ NWTPH-Dx - Acid wash cleanup ☐ - Silica gel cleanup ☐
X Dissolved metal samples were field filtered

Other *non-preserved (7-day) +preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature: Samantha Lindstram	Signature:	Signature:	Signature:
Printed Name: Samantha Lindstram	Printed Name: Jacob Waltz	Printed Name:	Printed Name:
Company: Landau Associates	Company: AGI, LLC	Company:	Company:
Date: 11/8/22 Time: 1434	Date: 11/08/22 Time: 1434	Date: Time:	Date: Time:

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10/2018

LANDAU ASSOCIATES

Chain-of-Custody Record

☐ North Seattle (206) 631-8660 ☒ Tacoma (253) 926-2493 ☐ Olympia (360) 791-3178
☐ Spokane (509) 327-9737 ☐ Portland (503) 542-1080 ☐ _____

Date 11/8/22
Page 1 of 1

Turnaround Time: (Standard) Accelerated

Project Name DC Regional GW Project No. 025217.002.032
Project Location/Event SWMU-17 / November 2022
Sampler's Name Samantha Lindstram
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com
paul.m.morin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements:
Shipment Method: drop off
Stored on ice: (Yes) No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC-PCE,TCE,cDCE,VC (8260D)*	AMEE (RSK SOP-175 Mod)+	TOC (SM5310C)	Total Arsenic/Copper (200.8 or 6020B)	Dissolved Arsenic/Copper (200.8 or 6020B)	Observations/Comments
~~BDC-05-22-221108~~		1312 ~~1358~~								
BDC-05-22-221108	11/8/22		AQ	7	X		X	X	X	X Sulfate by E300.0
BDC-05-12-221108	11/8/22	1358	AQ	9	X	X	X	X	X	X KES 11/9/2022
BDC-Dup3-221108	11/8/22	1408	AQ	9	X	X	X	X	X	X
TripBlanks-221108	—	—	AQ	24 SSC	X	X				

[redacted]

__ Allow water samples to settle, collect aliquot from clear portion ☐
__ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
X Dissolved metal samples were field filtered

Other *non-preserved (7-day)
+preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature Samantha Lindstram	Signature	Signature	Signature
Printed Name Samantha Lindstram	Printed Name Jacob Waltz	Printed Name	Printed Name
Company Landau Associates	Company AGI, LLC	Company	Company
Date 11/8/22 Time 1434	Date 11/08/22 Time 1434	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-05-22-221108	22K0179-01	Water	08-Nov-2022 13:12	08-Nov-2022 14:34
BDC-05-22-221108	22K0179-02	Water	08-Nov-2022 13:12	08-Nov-2022 14:34
BDC-05-12-221108	22K0179-03	Water	08-Nov-2022 13:58	08-Nov-2022 14:34
BDC-05-12-221108	22K0179-04	Water	08-Nov-2022 13:58	08-Nov-2022 14:34
BDC-DUP3-221108	22K0179-05	Water	08-Nov-2022 14:08	08-Nov-2022 14:34
BDC-DUP3-221108	22K0179-06	Water	08-Nov-2022 14:08	08-Nov-2022 14:34
Trip Blank	22K0179-07	Water	08-Nov-2022 13:12	08-Nov-2022 14:34

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Wet Chemistry

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 11/8/2022 3:54:23PM

WORK ORDER

22K0179

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH	
22K0179-01 A	HDPE NM, 500 mL		
22K0179-01 B	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
22K0179-01 C	HDPE NM, 250mL HNO3	<2	Pass
22K0179-01 D	VOA Vial, Clear, 40 mL		
22K0179-01 E	VOA Vial, Clear, 40 mL		
22K0179-01 F	VOA Vial, Clear, 40 mL		
22K0179-02 A	HDPE NM, 250mL HNO3 (FF)	<2	Pass
22K0179-03 A	HDPE NM, 500 mL		
22K0179-03 B	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
22K0179-03 C	HDPE NM, 250mL HNO3	<2	Pass
22K0179-03 D	VOA Vial, Clear, 40 mL		
22K0179-03 E	VOA Vial, Clear, 40 mL		
22K0179-03 F	VOA Vial, Clear, 40 mL		
22K0179-03 G	VOA Vial, Clear, 40 mL, HCL		
22K0179-03 H	VOA Vial, Clear, 40 mL, HCL		
22K0179-04 A	HDPE NM, 250mL HNO3 (FF)	<2	Pass
22K0179-05 A	HDPE NM, 500 mL		
22K0179-05 B	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
22K0179-05 C	HDPE NM, 250mL HNO3	<2	Pass
22K0179-05 D	VOA Vial, Clear, 40 mL		
22K0179-05 E	VOA Vial, Clear, 40 mL		
22K0179-05 F	VOA Vial, Clear, 40 mL		
22K0179-05 G	VOA Vial, Clear, 40 mL, HCL		
22K0179-05 H	VOA Vial, Clear, 40 mL, HCL		
22K0179-06 A	HDPE NM, 250mL HNO3 (FF)	<2	Pass
22K0179-07 A	VOA Vial, Clear, 40 mL		
22K0179-07 B	VOA Vial, Clear, 40 mL, HCL		

JSW
Preservation Confirmed By

11/8/22
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau Boeing Project Name: DC Regional GW

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22KA179 Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1434 2.1 ____ ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 70009708

Cooler Accepted by: TG Date: 11/08/22 Time: 1434

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs (Baggies) (Foam Block) Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	11/07/22	

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TG Date: 11/08/22 Time: 1542 Labels checked by: TG

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-22-221108

22K0179-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 13:12

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 14:32

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0179-01 D

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	4.13	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	2.33	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-22-221108

22K0179-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2022 13:12

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 10:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0179-01 C 01

Preparation Batch: BKK0470 — Sample Size: 25 mL

Prepared: 11/16/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	39.0	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.278	ug/L	J

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-22-221108

22K0179-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2022 13:12

Instrument: IC930 Analyst: KLD — Analyzed: 11/09/2022 00:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0179-01 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	1.85	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-22-221108

22K0179-01 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/08/2022 13:12

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/28/2022 19:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0179-01 B

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	11.33	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-22-221108

22K0179-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2022 13:12

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/15/2022 05:31

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0179-02 A 01

Preparation Batch: BKK0275 — Sample Size: 25 mL

Prepared: 11/09/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	39.5	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	0.270	ug/L	J

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-12-221108

22K0179-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 13:58

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 14:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0179-03 D

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-12-221108

22K0179-03 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2022 13:58

Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 11:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0179-03 G

Preparation Batch: BKK0262 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7330	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*79.5*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-12-221108

22K0179-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2022 13:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 15:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0179-03 C 01

Preparation Batch: BKK0470 — Sample Size: 25 mL

Prepared: 11/16/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	2.99	ug/L	
Copper	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-12-221108

22K0179-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2022 13:58

Instrument: IC930 Analyst: KLD — Analyzed: 11/09/2022 01:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0179-03 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-12-221108

22K0179-03RE1 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/08/2022 13:58

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/30/2022 17:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0179-03RE1 B

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.61	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-05-12-221108

22K0179-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2022 13:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/15/2022 05:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0179-04 A 01

Preparation Batch: BKK0275 — Sample Size: 25 mL

Prepared: 11/09/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	3.03	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-DUP3-221108

22K0179-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 14:08

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 15:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0179-05 D

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*86.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*96.6*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-DUP3-221108

22K0179-05 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2022 14:08
Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 11:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0179-05 G
Preparation Batch: BKK0262 — Sample Size: 10 mL
Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7730	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*88.2*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-DUP3-221108

22K0179-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2022 14:08

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 10:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0179-05 C 01

Preparation Batch: BKK0468 — Sample Size: 25 mL

Prepared: 11/16/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	3.12	ug/L	
Copper	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-DUP3-221108

22K0179-05 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2022 14:08

Instrument: IC930 Analyst: KLD — Analyzed: 11/09/2022 01:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0179-05 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-DUP3-221108

22K0179-05RE1 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/08/2022 14:08

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/30/2022 17:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0179-05RE1 B

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.64	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

BDC-DUP3-221108

22K0179-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/08/2022 14:08

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/15/2022 05:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0179-06 A 01

Preparation Batch: BKK0275 — Sample Size: 25 mL

Prepared: 11/09/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	2.92	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Trip Blank

22K0179-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 13:12

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 12:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0179-07 A

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*97.2*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*99.2*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Trip Blank

22K0179-07 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2022 13:12
Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 13:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0179-07 B
Preparation Batch: BKK0262 — Sample Size: 10 mL
Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*90.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.17		ug/L	*5.00*		*103*	*80-129*			
Surrogate: Toluene-d8	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.73		ug/L	*5.00*		*94.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01		ug/L	*5.00*		*100*	*80-120*			
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
Vinyl Chloride	10.3	0.20	ug/L	10.0		103	66-133			
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	80-121			
Trichloroethene	10.7	0.20	ug/L	10.0		107	80-120			
Tetrachloroethene	11.2	0.20	ug/L	10.0		112	80-120			
Surrogate: 1,2-Dichloroethane-d4	5.00		ug/L	*5.00*		*100*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.79		ug/L	*5.00*		*95.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*80-120*			
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
Vinyl Chloride	10.4	0.20	ug/L	10.0		104	66-133	1.12	30	
cis-1,2-Dichloroethene	11.0	0.20	ug/L	10.0		110	80-121	3.00	30	
Trichloroethene	11.1	0.20	ug/L	10.0		111	80-120	3.92	30	
Tetrachloroethene	11.3	0.20	ug/L	10.0		113	80-120	0.80	30	
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.89		ug/L	*5.00*		*97.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.85		ug/L	*5.00*		*96.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.1*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKK0262 - EPA RSK-175

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0262-BLK1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:53						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1120		ug/L	*1800*		*62.0*	*62-122*			
LCS (BKK0262-BS1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:17						
Methane	571	0.65	ug/L	656		87.0	80-120			
Ethane	1100	1.23	ug/L	1230		89.7	80-120			
Ethene	1060	1.14	ug/L	1150		92.0	80-120			
Acetylene	908	1.06	ug/L	1060		85.6	73-123			
Surrogate: Propane	1480		ug/L	*1800*		*82.4*	*62-122*			
LCS Dup (BKK0262-BSD1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:35						
Methane	636	0.65	ug/L	656		96.9	80-120	10.80	30	
Ethane	1240	1.23	ug/L	1230		101	80-120	11.50	30	
Ethene	1180	1.14	ug/L	1150		103	80-120	11.20	30	
Acetylene	1020	1.06	ug/L	1060		96.4	73-123	11.80	30	
Surrogate: Propane	1720		ug/L	*1800*		*95.5*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKK0468 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0468-BLK1)					Prepared: 16-Nov-2022 Analyzed: 17-Nov-2022 18:31							
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
LCS (BKK0468-BS1)					Prepared: 16-Nov-2022 Analyzed: 17-Nov-2022 18:36							
Arsenic	75a	23.4	0.0373	0.200	ug/L	25.0		93.6	80-120			
Copper	63	24.4	0.173	0.500	ug/L	25.0		97.6	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKK0470 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0470-BLK1)						Prepared: 16-Nov-2022 Analyzed: 18-Nov-2022 02:40						
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
LCS (BKK0470-BS1)						Prepared: 16-Nov-2022 Analyzed: 18-Nov-2022 02:45						
Arsenic	75a	24.6	0.0373	0.200	ug/L	25.0		98.6	80-120			
Copper	63	25.5	0.173	0.500	ug/L	25.0		102	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BKK0275 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0275-BLK1)						Prepared: 09-Nov-2022 Analyzed: 10-Nov-2022 19:13						
Arsenic, Dissolved	75a	ND	0.0373	0.200	ug/L							U
Copper, Dissolved	63	ND	0.173	0.500	ug/L							U
LCS (BKK0275-BS1)						Prepared: 09-Nov-2022 Analyzed: 10-Nov-2022 19:18						
Arsenic, Dissolved	75a	25.3	0.0373	0.200	ug/L	25.0		101	80-120			
Copper, Dissolved	63	23.8	0.173	0.500	ug/L	25.0		95.1	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0256 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0256-BLK1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:37							
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0256-BS1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:57							
Sulfate	5.29	0.100	0.100	mg/L	5.00		106	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0757 - SM 5310 B-00

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0757-BLK1)				Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 16:39							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKK0757-BS1)				Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 17:05							
Total Organic Carbon	20.56	0.50	0.50	mg/L	20.00		103	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:52

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

06 December 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (025217.002.032)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0206	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22K0206

LANDAU ASSOCIATES

Chain-of-Custody Record

☐ North Seattle (206) 631-8660 ☒ Tacoma (253) 926-2493 ☐ Olympia (360) 791-3178
☐ Spokane (509) 327-9737 ☐ Portland (503) 542-1080 ☐ _____

Date 11/9/22
Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name DC Regional GW
Project No. 025217.002.032
Project Location/Event SWMU-17 / November 2022
Sampler's Name Samantha Lindstrom, Josh Burbach
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com, paul.m.marin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements:
Shipment Method: drop off
Stored on ice: (Yes) / No

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC-PCE,TCE,cDCE,VC (8260B)*	AMEE (ASKSOP-175/MOD)+	TOC (SM5310 C)	Sulfate (E300.0)	Nitrate,Nitrite (300.0)	Total As, Cu (200.8 ICPMS)	Dissolved As, Cu (200.8 ICPMS)	Observations/Comments
BDC-05-S-221109	11/9/22	0916	Aq	7 9 SSL	X		X	X		X	X	
BDC-05-17-221109	11/9/22	938	AQ	9	X	X	X	X		X	X	
BDC-05-16-221109	11/9/22	1014	AQ	9	X	X	X	X		X	X	
BDC-05-15-221109	11/9/22	1054	AQ	9	X	X	X	X		X	X	
BDC-05-21-221109	11/9/22	1138	AQ	9	X	X	X	X		X	X	
BDC-05-04-221109	11/9/22	1020	AQ	9	X	X	X	X	X	X	X	
BDC-05-20-221109	11/9/22	1212	AQ	9	X	X	X	X		X	X	
BDC-05-07-221109	11/9/22	1117	AQ	9	X	X	X	X		X	X	
BDC-05-13-221109	11/9/22	1258	AQ	9	X	X	X	X		X	X	
BDC-05-09-221109	11/9/22	1201	AQ	9	X	X	X	X		X	X	
BDC-05-19-221109	11/9/22	1336	AQ	9	X	X	X	X		X	X	
BDC-05-02-221109	11/9/22	1244	AQ	9	X	X	X	X		X	X	
BDC-05-10-221109	11/9/22	1341	AQ	9	X	X	X	X		X	X	
BDC-05-03-221109	11/9/22	1428	AQ	9	X	X	X	X		X	X	
BDC-05-11-221109	11/9/22	1421	AQ	9	X	X	X	X		X	X	
BDC-05-18-221109	11/9/22	1518	AQ	9	X	X	X	X		X	X	
BDC-05-08-221109	11/9/22	1520	AQ	7	X		X	X		X	X	
TripBlankS-221109	~~11/9/22~~ SSL		AQ	4	X	X						

___ Allow water samples to settle, collect aliquot from clear portion ☐
___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
☒ Dissolved metal samples were field filtered

Other ~~X~~ non-preserved (7-day)
+ VOAs preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature ~~X~~ [signature]	Signature [signature]	Signature	Signature
Printed Name Samantha Lindstrom	Printed Name Chloe Amos	Printed Name	Printed Name
Company Landau Associates	Company LAA	Company	Company
Date 11/9/22 Time 1630	Date 11/9/22 Time 1630	Date Time	Date Time

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

10/2018

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-05-05-221109	22K0206-01	Water	09-Nov-2022 09:16	09-Nov-2022 16:30
BDC-05-05-221109	22K0206-02	Water	09-Nov-2022 09:16	09-Nov-2022 16:30
BDC-05-17-221109	22K0206-03	Water	09-Nov-2022 09:38	09-Nov-2022 16:30
BDC-05-17-221109	22K0206-04	Water	09-Nov-2022 09:38	09-Nov-2022 16:30
BDC-05-16-221109	22K0206-05	Water	09-Nov-2022 10:14	09-Nov-2022 16:30
BDC-05-16-221109	22K0206-06	Water	09-Nov-2022 10:14	09-Nov-2022 16:30
BDC-05-15-221109	22K0206-07	Water	09-Nov-2022 10:54	09-Nov-2022 16:30
BDC-05-15-221109	22K0206-08	Water	09-Nov-2022 10:54	09-Nov-2022 16:30
BDC-05-21-221109	22K0206-09	Water	09-Nov-2022 11:38	09-Nov-2022 16:30
BDC-05-21-221109	22K0206-10	Water	09-Nov-2022 11:38	09-Nov-2022 16:30
BDC-05-04-221109	22K0206-11	Water	09-Nov-2022 10:20	09-Nov-2022 16:30
BDC-05-04-221109	22K0206-12	Water	09-Nov-2022 10:20	09-Nov-2022 16:30
BDC-05-20-221109	22K0206-13	Water	09-Nov-2022 12:12	09-Nov-2022 16:30
BDC-05-20-221109	22K0206-14	Water	09-Nov-2022 12:12	09-Nov-2022 16:30
BDC-05-07-221109	22K0206-15	Water	09-Nov-2022 11:17	09-Nov-2022 16:30
BDC-05-07-221109	22K0206-16	Water	09-Nov-2022 11:17	09-Nov-2022 16:30
BDC-05-13-221109	22K0206-17	Water	09-Nov-2022 12:58	09-Nov-2022 16:30
BDC-05-13-221109	22K0206-18	Water	09-Nov-2022 12:58	09-Nov-2022 16:30
BDC-05-09-221109	22K0206-19	Water	09-Nov-2022 12:01	09-Nov-2022 16:30
BDC-05-09-221109	22K0206-20	Water	09-Nov-2022 12:58	09-Nov-2022 16:30
BDC-05-19-221109	22K0206-21	Water	09-Nov-2022 13:36	09-Nov-2022 16:30
BDC-05-19-221109	22K0206-22	Water	09-Nov-2022 13:36	09-Nov-2022 16:30
BDC-05-02-221109	22K0206-23	Water	09-Nov-2022 12:44	09-Nov-2022 16:30
BDC-05-02-221109	22K0206-24	Water	09-Nov-2022 12:44	09-Nov-2022 16:30
BDC-05-10-221109	22K0206-25	Water	09-Nov-2022 13:41	09-Nov-2022 16:30
BDC-05-10-221109	22K0206-26	Water	09-Nov-2022 13:41	09-Nov-2022 16:30
BDC-05-03-221109	22K0206-27	Water	09-Nov-2022 14:28	09-Nov-2022 16:30
BDC-05-03-221109	22K0206-28	Water	09-Nov-2022 14:28	09-Nov-2022 16:30
BDC-05-11-221109	22K0206-29	Water	09-Nov-2022 14:21	09-Nov-2022 16:30
BDC-05-11-221109	22K0206-30	Water	09-Nov-2022 14:21	09-Nov-2022 16:30
BDC-05-18-221109	22K0206-31	Water	09-Nov-2022 15:18	09-Nov-2022 16:30
BDC-05-18-221109	22K0206-32	Water	09-Nov-2022 15:18	09-Nov-2022 16:30
BDC-05-08-221109	22K0206-33	Water	09-Nov-2022 15:20	09-Nov-2022 16:30
BDC-05-08-221109	22K0206-34	Water	09-Nov-2022 15:20	09-Nov-2022 16:30
Tripblanks-221109	22K0206-35	Water	09-Nov-2022 00:00	09-Nov-2022 16:30

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Volatile Gases - MEE by RSK175

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of CCV1 was low for acetylene. CCV2 was analyzed soon after and was in control. DUP2 was analyzed in between these two CCVs, but matched the parent sample, so no further action was taken. CCV4 was low for several analytes. The associated samples (22K0206- 11, -13, and-15) were re-analyzed.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The sample duplicate relative percent difference (RPD) were within advisory control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau | Project Name: DC Regional

COC No(s): _____ NA | Delivered by: Fed-Ex UPS Courier ~~Hand Delivered~~ Other: _____

Assigned ARI Job No: 22k0206 | Tracking No: _____ NA

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1630 | 2.3 | 2.5 | ___ | ___ | ___ | ___

If cooler temperature is out of compliance fill out form 00070F | Temp Gun ID#: 9705

Cooler Accepted by: Carlos Amaya | Date: 11/9/22 | Time: 1630

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	(Grouped)	Not
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?	T.S.	(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	11/7/22	

Were the sample(s) split by ARI? (NA) YES | Date/Time: _____ | Equipment: _____ | Split by: _____

Samples Logged by: [signature] | Date: 11/10/22 | Time: 9:39 | Labels checked by: _____

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

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

Additional Notes, Discrepancies, & Resolutions:

Bubbles in 05-02 C 22k0206-23 FIELD

log to determine size

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 11/10/2022 10:23:10AM

WORK ORDER

22K0206

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: 025217.002.032**

Preservation Confirmation

Container ID	Container Type	pH
22K0206-01 A	VOA Vial, Clear, 40 mL	
22K0206-01 B	VOA Vial, Clear, 40 mL	
22K0206-01 C	VOA Vial, Clear, 40 mL	
22K0206-01 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-01 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-01 F	VOA Vial, Clear, 40 mL, HCL	
22K0206-01 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 2
22K0206-01 H	HDPE NM, 1000 mL	
22K0206-01 I	HDPE NM, 250mL HNO3	<2 2
22K0206-02 A	HDPE NM, 250mL HNO3 (FF)	<2 2
22K0206-03 A	VOA Vial, Clear, 40 mL	
22K0206-03 B	VOA Vial, Clear, 40 mL	
22K0206-03 C	VOA Vial, Clear, 40 mL	
22K0206-03 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-03 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-03 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 2
22K0206-03 H	HDPE NM, 1000 mL	
22K0206-03 I	HDPE NM, 250mL HNO3	<2 2
22K0206-04 A	HDPE NM, 250mL HNO3 (FF)	<2 2
22K0206-05 A	VOA Vial, Clear, 40 mL	
22K0206-05 B	VOA Vial, Clear, 40 mL	
22K0206-05 C	VOA Vial, Clear, 40 mL	
22K0206-05 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-05 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-05 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 2
22K0206-05 H	HDPE NM, 1000 mL	
22K0206-05 I	HDPE NM, 250mL HNO3	<2 2
22K0206-06 A	HDPE NM, 250mL HNO3 (FF)	<2 2
22K0206-07 A	VOA Vial, Clear, 40 mL	
22K0206-07 B	VOA Vial, Clear, 40 mL	
22K0206-07 C	VOA Vial, Clear, 40 mL	
22K0206-07 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-07 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-07 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 2

Reviewed By Date

WORK ORDER

22K0206

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: 025217.002.032**

22K0206-15 F	VOA Vial, Clear, 40 mL, HCL	
22K0206-15 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 P
22K0206-15 H	HDPE NM, 1000 mL	
22K0206-15 I	HDPE NM, 250mL HNO3	<2 P
22K0206-16 A	HDPE NM, 250mL HNO3 (FF)	<2 P
22K0206-17 A	VOA Vial, Clear, 40 mL	
22K0206-17 B	VOA Vial, Clear, 40 mL	
22K0206-17 C	VOA Vial, Clear, 40 mL	
22K0206-17 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-17 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-17 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 P
22K0206-17 H	HDPE NM, 1000 mL	
22K0206-17 I	HDPE NM, 250mL HNO3	<2 P
22K0206-18 A	HDPE NM, 250mL HNO3 (FF)	<2 P
22K0206-19 A	VOA Vial, Clear, 40 mL	
22K0206-19 B	VOA Vial, Clear, 40 mL	
22K0206-19 C	VOA Vial, Clear, 40 mL	
22K0206-19 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-19 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-19 F	VOA Vial, Clear, 40 mL, HCL	
22K0206-19 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 P
22K0206-19 H	HDPE NM, 1000 mL	
22K0206-19 I	HDPE NM, 250mL HNO3	<2 P
22K0206-20 A	HDPE NM, 250mL HNO3 (FF)	<2 P
22K0206-21 A	VOA Vial, Clear, 40 mL	
22K0206-21 B	VOA Vial, Clear, 40 mL	
22K0206-21 C	VOA Vial, Clear, 40 mL	
22K0206-21 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-21 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-21 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 P
22K0206-21 H	HDPE NM, 1000 mL	
22K0206-21 I	HDPE NM, 250mL HNO3	<2 P
22K0206-22 A	HDPE NM, 250mL HNO3 (FF)	<2 P
22K0206-23 A	VOA Vial, Clear, 40 mL	
22K0206-23 B	VOA Vial, Clear, 40 mL	
22K0206-23 C	VOA Vial, Clear, 40 mL	

Reviewed By Date

WORK ORDER

22K0206

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: 025217.002.032**

22K0206-31 A	VOA Vial, Clear, 40 mL	
22K0206-31 B	VOA Vial, Clear, 40 mL	
22K0206-31 C	VOA Vial, Clear, 40 mL	
22K0206-31 D	VOA Vial, Clear, 40 mL, HCL	
22K0206-31 E	VOA Vial, Clear, 40 mL, HCL	
22K0206-31 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 p
22K0206-31 H	HDPE NM, 1000 mL	
22K0206-31 I	HDPE NM, 250mL HNO3	<2 p
22K0206-32 A	HDPE NM, 250mL HNO3 (FF)	<2 p
22K0206-33 A	VOA Vial, Clear, 40 mL	
22K0206-33 B	VOA Vial, Clear, 40 mL	
22K0206-33 C	VOA Vial, Clear, 40 mL	
22K0206-33 G	Glass NM, Amber, 250 mL, 9N H2SO4	<2 p
22K0206-33 H	HDPE NM, 1000 mL	
22K0206-33 I	HDPE NM, 250mL HNO3	<2 p
22K0206-34 A	HDPE NM, 250mL HNO3 (FF)	<2 p
22K0206-35 A	VOA Vial, Clear, 40 mL	
22K0206-35 B	VOA Vial, Clear, 40 mL	
22K0206-35 C	VOA Vial, Clear, 40 mL, HCL	
22K0206-35 D	VOA Vial, Clear, 40 mL, HCL	

Preservation Confirmed By

11/10/22
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-05-221109

22K0206-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 09:16

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 13:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-01 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.96	ug/L	
Tetrachloroethene	127-18-4	1	0.20	0.72	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*97.3*	*%*	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-05-221109

22K0206-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 09:16

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-01 I 01

Preparation Batch: BKK0574 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	0.579	ug/L	
Copper	7440-50-8	1	0.173	0.500	2.98	ug/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-05-221109

22K0206-01 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 09:16

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 12:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-01 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	2.66	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-05-221109

22K0206-01RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 09:16

Instrument: IC930 Analyst: KLD — Analyzed: 11/11/2022 21:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-01RE1 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	1.00	1.00	36.6	mg/L	D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-05-221109

22K0206-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 09:16

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/18/2022 09:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-02 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	0.409	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	2.49	ug/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-17-221109

22K0206-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 09:38

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 14:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-03 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.36	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*113*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-17-221109

22K0206-03 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 09:38

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2022 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-03 D

Preparation Batch: BKK0317 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7590	ug/L	
Ethane	74-84-0	1	1.23	1.52	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*79.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-17-221109

22K0206-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 09:38

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-03 I 01

Preparation Batch: BKK0574 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	28.1	ug/L	D
Copper	7440-50-8	2	0.346	1.00	0.616	ug/L	J, D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-17-221109

22K0206-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 09:38

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 19:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-03 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.190	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-17-221109

22K0206-03 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 09:38

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 13:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-03 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	21.71	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-17-221109

22K0206-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 09:38

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-04 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	28.2	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	0.370	ug/L	J, D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-16-221109

22K0206-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 10:14

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 14:33

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-05 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.35	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*97.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-16-221109

22K0206-05 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 10:14

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2022 15:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-05 D

Preparation Batch: BKK0317 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	4470	ug/L	
Ethane	74-84-0	1	1.23	1.83	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*75.7*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-16-221109

22K0206-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 10:14

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-05 I 01

Preparation Batch: BKK0574 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	26.8	ug/L	D
Copper	7440-50-8	2	0.346	1.00	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-16-221109

22K0206-05 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 10:14

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 20:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-05 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-16-221109

22K0206-05 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 10:14

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 13:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-05 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	20.70	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-16-221109

22K0206-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 10:14

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:03

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-06 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	28.0	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-15-221109

22K0206-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 10:54

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 14:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-07 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.28	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*104*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-15-221109

22K0206-07 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 10:54

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2022 15:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-07 D

Preparation Batch: BKK0317 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5180	ug/L	
Ethane	74-84-0	1	1.23	1.35	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*77.0*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-15-221109

22K0206-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 10:54

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-07 I 01

Preparation Batch: BKK0574 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	33.7	ug/L	D
Copper	7440-50-8	2	0.346	1.00	ND	ug/L	U

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BDC-05-15-221109

22K0206-07 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 10:54

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 20:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-07 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-15-221109

22K0206-07 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 10:54

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 14:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-07 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	18.22	mg/L	

Analytical Resources, LLC
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-15-221109

22K0206-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 10:54

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-08 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	35.7	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-21-221109

22K0206-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 11:38

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 15:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-09 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.28	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*96.0*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-21-221109

22K0206-09 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 11:38

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2022 15:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-09 D

Preparation Batch: BKK0317 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3530	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*90.3*	*%*	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-21-221109

22K0206-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 11:38

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 17:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-09 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	17.1	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.407	ug/L	J

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-21-221109

22K0206-09 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 11:38

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 21:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-09 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	1.39	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-21-221109

22K0206-09 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 11:38

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 14:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-09 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	5.75	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
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BDC-05-21-221109

22K0206-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 11:38

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-10 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	19.4	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-04-221109

22K0206-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 10:20

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 15:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-11 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.84	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.64	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-04-221109

22K0206-11 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 10:20

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2022 16:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-11 D

Preparation Batch: BKK0317 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	4860	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*82.6*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
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BDC-05-04-221109

22K0206-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 10:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-11 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	23.8	ug/L	D
Copper	7440-50-8	2	0.346	1.00	23.8	ug/L	D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-04-221109

22K0206-11 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 10:20

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 21:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-11 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.100	ND	mg/L	U

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	6.72	mg/L	

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22K0206-11 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 10:20

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 14:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-11 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	16.72	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-04-221109

22K0206-11RE1 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 10:20

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 14:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-11RE1 E

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3920	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*79.3*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-04-221109

22K0206-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 10:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-12 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	17.6	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-20-221109

22K0206-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 12:12

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 16:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-13 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.42	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-20-221109

22K0206-13 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 12:12

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2022 16:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-13 D

Preparation Batch: BKK0317 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	4760	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*79.5*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-20-221109

22K0206-13 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:12

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-13 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	21.3	ug/L	D
Copper	7440-50-8	2	0.346	1.00	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-20-221109

22K0206-13 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 12:12

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 22:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-13 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.616	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-20-221109

22K0206-13 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 12:12

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 15:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-13 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	14.64	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-20-221109

22K0206-13RE1 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 12:12

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 14:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-13RE1 E

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	4220	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*76.5*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-20-221109

22K0206-14 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:12

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-14 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	20.4	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-07-221109

22K0206-15 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 11:17

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 16:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-15 B

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.68	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.24	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	0.42	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*98.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-07-221109

22K0206-15 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 11:17

Instrument: FID6 Analyst: LH — Analyzed: 11/10/2022 17:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-15 D

Preparation Batch: BKK0317 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3020	ug/L	
Ethane	74-84-0	1	1.23	1.27	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*81.3*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-07-221109

22K0206-15 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 11:17

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-15 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	6.06	ug/L	D
Copper	7440-50-8	2	0.346	1.00	2.56	ug/L	D

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-07-221109

22K0206-15 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 11:17

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 22:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-15 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	7.01	mg/L	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-07-221109

22K0206-15 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 11:17

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 16:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-15 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	14.43	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-07-221109

22K0206-15RE1 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 11:17

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 14:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-15RE1 E

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	2550	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*88.3*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-07-221109

22K0206-16 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 11:17

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-16 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	5.79	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-13-221109

22K0206-17 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 12:58

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 16:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-17 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.29	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*99.3*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-13-221109

22K0206-17 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 12:58

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 10:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-17 D

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7390	ug/L	
Ethane	74-84-0	1	1.23	5.08	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*96.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-13-221109

22K0206-17 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-17 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	16.3	ug/L	D
Copper	7440-50-8	2	0.346	1.00	0.932	ug/L	J, D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-13-221109

22K0206-17 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 12:58

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 22:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-17 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-13-221109

22K0206-17 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 12:58

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 16:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-17 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	14.44	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-13-221109

22K0206-18 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-18 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	9.79	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-09-221109

22K0206-19 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 12:01

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 17:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-19 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	1.02	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*99.9*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-09-221109

22K0206-19 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 12:01

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 10:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-19 D

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	2700	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*79.2*	*%*	

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-09-221109

22K0206-19 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:01

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-19 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	1.92	ug/L	D
Copper	7440-50-8	2	0.346	1.00	0.558	ug/L	J, D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-09-221109

22K0206-19 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 12:01

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 23:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-19 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	1.37	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-09-221109

22K0206-19 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 12:01

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 17:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-19 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.18	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-09-221109

22K0206-20 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:58

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-20 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	1.23	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-19-221109

22K0206-21 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 13:36

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 17:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-21 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*99.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-19-221109

22K0206-21 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 13:36

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 10:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-21 D

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	7190	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*87.1*	*%*	

Analytical Resources, LLC
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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-19-221109

22K0206-21 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 13:36

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 02:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-21 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	4.67	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.310	ug/L	J

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-19-221109

22K0206-21 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 13:36

Instrument: IC930 Analyst: KLD — Analyzed: 11/10/2022 23:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-21 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-19-221109

22K0206-21 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 13:36

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 17:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-21 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	9.77	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-19-221109

22K0206-22 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 13:36

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 15:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-22 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	3.88	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-02-221109

22K0206-23 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 12:44

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 17:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-23 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.32	ug/L	
Trichloroethene	79-01-6	1	0.20	0.82	ug/L	
Tetrachloroethene	127-18-4	1	0.20	1.48	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-02-221109

22K0206-23 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 12:44

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 11:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-23 D

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5710	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*81.7*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-02-221109

22K0206-23 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:44

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-23 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.746	4.00	15.1	ug/L	D
Copper	7440-50-8	20	3.46	10.0	23.4	ug/L	D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-02-221109

22K0206-23RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 12:44

Instrument: IC930 Analyst: KLD — Analyzed: 11/11/2022 22:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-23RE1 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	1.00	1.00	30.1	mg/L	D

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-02-221109

22K0206-23RE1 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 12:44

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/02/2022 12:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-23RE1 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	237.0	mg/L	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-02-221109

22K0206-24 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 12:44

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 13:51

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-24 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	20	0.746	4.00	12.8	ug/L	D
Copper, Dissolved	7440-50-8	20	3.46	10.0	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-10-221109

22K0206-25 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 13:41

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 18:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-25 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.42	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-10-221109

22K0206-25 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 13:41

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 11:29

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-25 D

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5140	ug/L	
Ethane	74-84-0	1	1.23	1.26	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*94.3*	*%*	

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BDC-05-10-221109

22K0206-25 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 13:41

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-25 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	6.04	ug/L	D
Copper	7440-50-8	2	0.346	1.00	2.78	ug/L	D

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BDC-05-10-221109

22K0206-25 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 13:41

Instrument: IC930 Analyst: KLD — Analyzed: 11/11/2022 00:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-25 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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BDC-05-10-221109

22K0206-25 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 13:41

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 18:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-25 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.63	mg/L	

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BDC-05-10-221109

22K0206-26 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 13:41

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 14:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-26 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	5.78	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-03-221109

22K0206-27 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 14:28

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 18:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-27 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.70	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.24	ug/L	
Trichloroethene	79-01-6	1	0.20	0.24	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

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The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-03-221109

22K0206-27 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 14:28

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 11:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-27 D

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5340	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*78.0*	*%*	

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BDC-05-03-221109

22K0206-27 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 14:28

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-27 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	5	0.187	1.00	38.3	ug/L	D
Copper	7440-50-8	5	0.865	2.50	82.9	ug/L	D

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BDC-05-03-221109

22K0206-27 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 14:28

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 18:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-27 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		5	2.50	2.50	54.97	mg/L	D

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BDC-05-03-221109

22K0206-27RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 14:28

Instrument: IC930 Analyst: KLD — Analyzed: 11/12/2022 00:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-27RE1 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	2	0.200	0.200	11.2	mg/L	D

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BDC-05-03-221109

22K0206-28 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 14:28

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 13:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-28 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	5	0.187	1.00	29.4	ug/L	D
Copper, Dissolved	7440-50-8	5	0.865	2.50	8.90	ug/L	D

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BDC-05-11-221109

22K0206-29 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 14:21

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 18:58

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-29 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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BDC-05-11-221109

22K0206-29 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 14:21

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 12:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-29 D

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	6750	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*92.8*	*%*	

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22K0206-29 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 14:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 02:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-29 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	7.74	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.378	ug/L	J

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BDC-05-11-221109

22K0206-29 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 14:21

Instrument: IC930 Analyst: KLD — Analyzed: 11/11/2022 01:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-29 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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BDC-05-11-221109

22K0206-29 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 14:21

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 18:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-29 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	9.27	mg/L	

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BDC-05-11-221109

22K0206-30 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 14:21

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:29

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-30 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	7.32	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-18-221109

22K0206-31 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 15:18

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 19:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-31 B

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.25	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.96	ug/L	
Trichloroethene	79-01-6	1	0.20	1.53	ug/L	
Tetrachloroethene	127-18-4	1	0.20	2.86	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-18-221109

22K0206-31 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 15:18

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 12:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-31 E

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	218	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*97.6*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-18-221109

22K0206-31 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 15:18

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 02:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-31 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	17.0	ug/L	
Copper	7440-50-8	1	0.173	0.500	1.76	ug/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-18-221109

22K0206-31 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 15:18

Instrument: IC930 Analyst: KLD — Analyzed: 11/11/2022 02:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-31 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	6.13	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-18-221109

22K0206-31 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 15:18

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 19:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-31 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	8.33	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-18-221109

22K0206-32 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 15:18

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:32

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-32 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	0.150	ug/L	J
Copper, Dissolved	7440-50-8	1	0.173	0.500	0.497	ug/L	J

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-08-221109

22K0206-33 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 15:20

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 19:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-33 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-08-221109

22K0206-33 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 15:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 01:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-33 I 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	5	0.187	1.00	13.2	ug/L	D
Copper	7440-50-8	5	0.865	2.50	7.80	ug/L	D

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-08-221109

22K0206-33 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/09/2022 15:20

Instrument: IC930 Analyst: KLD — Analyzed: 11/11/2022 02:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-33 H

Preparation Batch: BKK0338 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-08-221109

22K0206-33 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/09/2022 15:20

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 12/01/2022 19:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0206-33 G

Preparation Batch: BKK0832 — Sample Size: 20 mL

Prepared: 11/30/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.34	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

BDC-05-08-221109

22K0206-34 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/09/2022 15:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0206-34 A 01

Preparation Batch: BKK0423 — Sample Size: 25 mL

Prepared: 11/15/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	3.79	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Tripblanks-221109

22K0206-35 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/09/2022 00:00

Instrument: NT3 Analyst: PKC — Analyzed: 11/10/2022 13:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-35 A

Preparation Batch: BKK0324 — Sample Size: 10 mL

Prepared: 11/10/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Tripblanks-221109

22K0206-35 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/09/2022 00:00

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 09:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0206-35 C

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*97.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0324 - EPA 8260D

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0324-BLK1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 13:04						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.02		ug/L	*5.00*		*100*	*80-129*			
Surrogate: Toluene-d8	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.89		ug/L	*5.00*		*97.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.02		ug/L	*5.00*		*100*	*80-120*			
LCS (BKK0324-BS1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 11:06						
Vinyl Chloride	10.7	0.20	ug/L	10.0		107	66-133			
cis-1,2-Dichloroethene	9.17	0.20	ug/L	10.0		91.7	80-121			
Trichloroethene	9.11	0.20	ug/L	10.0		91.1	80-120			
Tetrachloroethene	8.73	0.20	ug/L	10.0		87.3	80-120			
Surrogate: 1,2-Dichloroethane-d4	5.13		ug/L	*5.00*		*103*	*80-129*			
Surrogate: Toluene-d8	4.96		ug/L	*5.00*		*99.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.04		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94		ug/L	*5.00*		*98.8*	*80-120*			
LCS Dup (BKK0324-BSD1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 11:50						
Vinyl Chloride	11.1	0.20	ug/L	10.0		111	66-133	3.76	30	
cis-1,2-Dichloroethene	9.52	0.20	ug/L	10.0		95.2	80-121	3.70	30	
Trichloroethene	9.59	0.20	ug/L	10.0		95.9	80-120	5.10	30	
Tetrachloroethene	9.08	0.20	ug/L	10.0		90.8	80-120	3.93	30	
Surrogate: 1,2-Dichloroethane-d4	5.04		ug/L	*5.00*		*101*	*80-129*			
Surrogate: Toluene-d8	5.08		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.15		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.1*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKK0317 - EPA RSK-175

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0317-BLK1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 07:59						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1710		ug/L	*1800*		*95.1*	*62-122*			
LCS (BKK0317-BS1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 07:23						
Methane	595	0.65	ug/L	656		90.7	80-120			
Ethane	1150	1.23	ug/L	1230		93.4	80-120			
Ethene	1090	1.14	ug/L	1150		95.1	80-120			
Acetylene	893	1.06	ug/L	1060		84.3	73-123			
Surrogate: Propane	1670		ug/L	*1800*		*92.9*	*62-122*			
LCS Dup (BKK0317-BSD1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 07:41						
Methane	620	0.65	ug/L	656		94.5	80-120	4.11	30	
Ethane	1190	1.23	ug/L	1230		96.9	80-120	3.65	30	
Ethene	1140	1.14	ug/L	1150		99.4	80-120	4.45	30	
Acetylene	983	1.06	ug/L	1060		92.7	73-123	9.56	30	
Surrogate: Propane	1700		ug/L	*1800*		*94.3*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKK0457 - EPA RSK-175

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0457-BLK1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 08:52						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1720		ug/L	*1800*		*95.7*	*62-122*			
LCS (BKK0457-BS1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 08:16						
Methane	642	0.65	ug/L	656		97.9	80-120			
Ethane	1230	1.23	ug/L	1230		100	80-120			
Ethene	1180	1.14	ug/L	1150		103	80-120			
Acetylene	1010	1.06	ug/L	1060		95.6	73-123			
Surrogate: Propane	1760		ug/L	*1800*		*97.6*	*62-122*			
LCS Dup (BKK0457-BSD1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 08:34						
Methane	660	0.65	ug/L	656		101	80-120	2.69	30	
Ethane	1280	1.23	ug/L	1230		104	80-120	3.92	30	
Ethene	1220	1.14	ug/L	1150		106	80-120	3.30	30	
Acetylene	1010	1.06	ug/L	1060		95.7	73-123	0.15	30	
Surrogate: Propane	1780		ug/L	*1800*		*98.7*	*62-122*			
Duplicate (BKK0457-DUP1)	**Source: 22K0206-19**			Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 13:16						
Methane	3280	0.65	ug/L		2700			19.50	30	
Ethane	ND	1.23	ug/L		ND					U
Ethene	ND	1.14	ug/L		ND					U
Acetylene	ND	1.06	ug/L		ND					U
Surrogate: Propane	1720		ug/L	*1800*	*1430*	*95.4*	*62-122*			
Duplicate (BKK0457-DUP2)	**Source: 22K0206-25**			Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 13:34						
Methane	6050	0.65	ug/L		5140			16.20	30	
Ethane	1.53	1.23	ug/L		1.26			19.30	30	
Ethene	ND	1.14	ug/L		ND					U
Acetylene	ND	1.06	ug/L		ND					U
Surrogate: Propane	1730		ug/L	*1800*	*1700*	*96.2*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKK0571 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0571-BLK1)						Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 15:22						
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
LCS (BKK0571-BS1)						Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 15:26						
Arsenic	75a	24.5	0.0373	0.200	ug/L	25.0		98.2	80-120			
Copper	63	26.1	0.173	0.500	ug/L	25.0		104	80-120			
Duplicate (BKK0571-DUP1)			**Source: 22K0206-09**			Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 17:22						
Arsenic	75a	17.9	0.0373	0.200	ug/L		17.1			4.74	20	
Copper	63	0.402	0.173	0.500	ug/L		0.407			1.24	20	J
Matrix Spike (BKK0571-MS1)			**Source: 22K0206-09**			Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 17:26						
Arsenic	75a	40.2	0.0373	0.200	ug/L	25.0	17.1	92.6	75-125			
Copper	63	24.7	0.173	0.500	ug/L	25.0	0.407	97.0	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKK0574 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0574-BLK1)					Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 15:29							
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
LCS (BKK0574-BS1)					Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 15:33							
Arsenic	75a	24.3	0.0373	0.200	ug/L	25.0		97.1	80-120			
Copper	63	25.4	0.173	0.500	ug/L	25.0		101	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BKK0423 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0423-BLK1)						Prepared: 15-Nov-2022 Analyzed: 17-Nov-2022 18:41						
Arsenic, Dissolved	75a	ND	0.0373	0.200	ug/L							U
Copper, Dissolved	63	ND	0.173	0.500	ug/L							U
LCS (BKK0423-BS1)						Prepared: 15-Nov-2022 Analyzed: 17-Nov-2022 18:46						
Arsenic, Dissolved	75a	24.5	0.0373	0.200	ug/L	25.0		98.1	80-120			
Copper, Dissolved	63	24.8	0.173	0.500	ug/L	25.0		99.2	80-120			
Duplicate (BKK0423-DUP1)			**Source: 22K0206-02**			Prepared: 15-Nov-2022 Analyzed: 18-Nov-2022 09:47						
Arsenic, Dissolved	75a	0.423	0.0373	0.200	ug/L		0.409			3.37	20	
Copper, Dissolved	63	2.53	0.173	0.500	ug/L		2.49			1.68	20	
Matrix Spike (BKK0423-MS1)			**Source: 22K0206-02**			Prepared: 15-Nov-2022 Analyzed: 18-Nov-2022 09:52						
Arsenic, Dissolved	75a	24.8	0.0373	0.200	ug/L	25.0	0.409	97.5	75-125			
Copper, Dissolved	63	26.6	0.173	0.500	ug/L	25.0	2.49	96.4	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0338 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0338-BLK1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 18:00							
Nitrate-N	ND	0.100	0.100	mg/L							U
Nitrite-N	ND	0.100	0.100	mg/L							U
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0338-BS1)				Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 18:20							
Nitrate-N	5.28	0.100	0.100	mg/L	5.00		106	90-110			
Nitrite-N	5.02	0.100	0.100	mg/L	5.00		100	90-110			
Sulfate	5.17	0.100	0.100	mg/L	5.00		103	90-110			
Duplicate (BKK0338-DUP1)		**Source: 22K0206-01**		Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 19:00							
Nitrate-N	3.40	0.100	0.100	mg/L		3.39			0.21	20	
Nitrite-N	ND	0.100	0.100	mg/L		ND					U
Duplicate (BKK0338-DUP2)		**Source: 22K0206-01RE1**		Prepared: 10-Nov-2022 Analyzed: 11-Nov-2022 22:16							
Sulfate	36.8	1.00	1.00	mg/L		36.6			0.69	20	D
Matrix Spike (BKK0338-MS1)		**Source: 22K0206-01**		Prepared: 10-Nov-2022 Analyzed: 10-Nov-2022 19:20							
Nitrate-N	5.50	0.100	0.100	mg/L	1.98	3.39	106	75-125			
Nitrite-N	1.70	0.100	0.100	mg/L	2.03	ND	83.8	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike (BKK0338-MS2)		**Source: 22K0206-01RE1**		Prepared: 10-Nov-2022 Analyzed: 11-Nov-2022 22:36							
Sulfate	71.4	2.00	2.00	mg/L	40.0	36.6	87.0	75-125			D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0832 - SM 5310 B-00

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0832-BLK1)				Prepared: 30-Nov-2022 Analyzed: 01-Dec-2022 10:48							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKK0832-BS1)				Prepared: 30-Nov-2022 Analyzed: 01-Dec-2022 12:00							
Total Organic Carbon	20.47	0.50	0.50	mg/L	20.00		102	90-110			
Duplicate (BKK0832-DUP1)		**Source: 22K0206-01**		Prepared: 30-Nov-2022 Analyzed: 01-Dec-2022 12:46							
Total Organic Carbon	2.65	0.50	0.50	mg/L		2.66			0.34	20	
Matrix Spike (BKK0832-MS1)		**Source: 22K0206-01**		Prepared: 30-Nov-2022 Analyzed: 01-Dec-2022 13:09							
Total Organic Carbon	20.50	0.50	0.50	mg/L	20.00	2.66	89.2	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Nitrate-N	DoD-ELAP,WADOE,WA-DW,NELAP
Nitrite-N	DoD-ELAP,WADOE,WA-DW,NELAP
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217.002.032	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:41

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

07 December 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0226	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

AR:22K0226

Landau Associates — Chain-of-Custody Record

- [ ] North Seattle (206) 631-8660
- [x] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] _____

Date 11/10/22

Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name DC Regional GW Project No. 025217.002.032

Project Location/Event SWMU-17 / November 2022

Sampler's Name Samantha Lindstrom

Project Contact Chris Kimmel, Jen Parsons

Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com, paul.m.morin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements: _____

Shipment Method: _____

Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC-PCE, TCE, cDCE, VC (8260D) *	AMEE (RSK SOP-175 Mod) +	TOC (SM5310C)	Sulfate (E300.0)	Total As, Cu (200.8 ICP-MS)	Dissolved As, Cu (200.8 ICP-MS)	Observations/Comments
BDC-05-14-221110	11/10/22	744	AQ	9	X	X	X	X	X	X	
BDC-05-23-221110	11/10/22	846	AQ	7	X		X	X	X	X	
TripblankS-221110	~~11/10/22~~ SJL	—	AQ	4	X	X					

Observations/Comments

- ___ Allow water samples to settle, collect aliquot from clear portion ☐
- ___ NWTPH-Dx - Acid wash cleanup ☐
  - Silica gel cleanup ☐
- (X) ~~Dissolved~~ metal samples were field filtered

Other
* non-preserved (7-day)
+ preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature Samantha Lindstrom	Signature	Signature	Signature
Printed Name Samantha Lindstrom	Printed Name Jacob Hall	Printed Name	Printed Name
Company Landau Associates	Company AR, LLC	Company	Company
Date 11/10/22 Time 0927	Date 11/10/22 Time 0927	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-05-14-221110	22K0226-01	Water	10-Nov-2022 07:44	10-Nov-2022 09:07
BDC-05-14-221110	22K0226-02	Water	10-Nov-2022 07:44	10-Nov-2022 09:07
BDC-05-23-221110	22K0226-03	Water	10-Nov-2022 08:46	10-Nov-2022 09:07
BDC-05-23-221110	22K0226-04	Water	10-Nov-2022 08:46	10-Nov-2022 09:07
Tripblanks-221110	22K0226-05	Water	10-Nov-2022 00:00	10-Nov-2022 09:07

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 11/10/2022 3:05:56PM

WORK ORDER

22K0226

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH
22K0226-01 A	HDPE NM, 500 mL	
22K0226-01 B	HDPE NM, 250mL HNO3	<2 pass (P)
22K0226-01 C	Glass NM, Amber, 250 mL, 9N H2SO4	<2 P
22K0226-01 D	VOA Vial, Clear, 40 mL	
22K0226-01 E	VOA Vial, Clear, 40 mL	
22K0226-01 F	VOA Vial, Clear, 40 mL	
22K0226-01 G	VOA Vial, Clear, 40 mL, HCL	
22K0226-01 H	VOA Vial, Clear, 40 mL, HCL	
22K0226-02 A	HDPE NM, 250mL HNO3 (FF)	<2 P
22K0226-03 A	HDPE NM, 500 mL	
22K0226-03 B	HDPE NM, 250mL HNO3	<2 P
22K0226-03 C	Glass NM, Amber, 250 mL, 9N H2SO4	<2 P
22K0226-03 D	VOA Vial, Clear, 40 mL	
22K0226-03 E	VOA Vial, Clear, 40 mL	
22K0226-03 F	VOA Vial, Clear, 40 mL	
22K0226-04 A	HDPE NM, 250mL HNO3 (FF)	<2 P
22K0226-05 A	VOA Vial, Clear, 40 mL	
22K0226-05 B	VOA Vial, Clear, 40 mL, HCL	
22K0226-05 C	VOA Vial, Clear, 40 mL	
22K0226-05 D	VOA Vial, Clear, 40 mL, HCL	

PFB
Preservation Confirmed By

11/10/22
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau/Bucky

Project Name: DC Regional GW

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 226026

Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 0927 — 4.1

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: IR00970S

Cooler Accepted by: JB — Date: 11/2/22 — Time: 0927

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	11/7/22	

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: PIA — Date: 11/10/22 — Time: 14:37 — Labels checked by: KMS

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-14-221110

22K0226-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/10/2022 07:44

Instrument: NT2 Analyst: PKC — Analyzed: 11/11/2022 15:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0226-01 D

Preparation Batch: BKK0357 — Sample Size: 10 mL

Prepared: 11/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.23	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*115*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*88.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*96.0*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-14-221110

22K0226-01 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/10/2022 07:44

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 13:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0226-01 G

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	6480	ug/L	
Ethane	74-84-0	1	1.23	2.90	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*88.8*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-14-221110

22K0226-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/10/2022 07:44

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 16:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0226-01 B 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	2	0.0746	0.400	54.4	ug/L	D
Copper	7440-50-8	2	0.346	1.00	0.404	ug/L	J, D

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-14-221110

22K0226-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/10/2022 07:44

Instrument: IC930 Analyst: KLD — Analyzed: 11/18/2022 20:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0226-01 A

Preparation Batch: BKK0585 — Sample Size: 10 mL

Prepared: 11/18/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.588	mg/L	

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Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-14-221110

22K0226-01 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/10/2022 07:44

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/29/2022 11:31

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0226-01 C

Preparation Batch: BKK0758 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		5	2.50	2.50	34.21	mg/L	D

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-14-221110

22K0226-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/10/2022 07:44

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 00:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0226-02 A 01

Preparation Batch: BKK0662 — Sample Size: 25 mL

Prepared: 11/22/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	5	0.187	1.00	55.7	ug/L	D
Copper, Dissolved	7440-50-8	5	0.865	2.50	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-23-221110

22K0226-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/10/2022 08:46

Instrument: NT2 Analyst: PKC — Analyzed: 11/11/2022 16:03

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0226-03 E

Preparation Batch: BKK0357 — Sample Size: 10 mL

Prepared: 11/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.77	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.27	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*113*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*93.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-23-221110

22K0226-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/10/2022 08:46

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/22/2022 17:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0226-03 B 01

Preparation Batch: BKK0571 — Sample Size: 25 mL

Prepared: 11/18/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	14.1	ug/L	
Copper	7440-50-8	1	0.173	0.500	0.211	ug/L	J

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-23-221110

22K0226-03 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/10/2022 08:46

Instrument: IC930 Analyst: KLD — Analyzed: 11/18/2022 21:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0226-03 A

Preparation Batch: BKK0585 — Sample Size: 10 mL

Prepared: 11/18/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

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Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-23-221110

22K0226-03 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/10/2022 08:46

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/29/2022 11:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0226-03 C

Preparation Batch: BKK0758 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.37	mg/L	

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Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

BDC-05-23-221110

22K0226-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/10/2022 08:46

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 00:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0226-04 A 01

Preparation Batch: BKK0662 — Sample Size: 25 mL

Prepared: 11/22/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	2	0.0746	0.400	16.7	ug/L	D
Copper, Dissolved	7440-50-8	2	0.346	1.00	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Tripblanks-221110

22K0226-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/10/2022 00:00
Instrument: NT2 Analyst: PKC — Analyzed: 11/11/2022 12:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0226-05 A
Preparation Batch: BKK0357 — Sample Size: 10 mL
Prepared: 11/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*111*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*99.5*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Tripblanks-221110

22K0226-05 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/10/2022 00:00

Instrument: FID6 Analyst: LH — Analyzed: 11/16/2022 09:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0226-05 B

Preparation Batch: BKK0457 — Sample Size: 10 mL

Prepared: 11/16/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*106*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0357 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0357-BLK1)				Prepared: 11-Nov-2022 Analyzed: 11-Nov-2022 12:26						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.39		ug/L	*5.00*		*108*	*80-129*			
Surrogate: Toluene-d8	4.79		ug/L	*5.00*		*95.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.91		ug/L	*5.00*		*98.2*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.13		ug/L	*5.00*		*103*	*80-120*			
LCS (BKK0357-BS1)				Prepared: 11-Nov-2022 Analyzed: 11-Nov-2022 11:04						
Vinyl Chloride	9.97	0.20	ug/L	10.0		99.7	66-133			
cis-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100	80-121			
Trichloroethene	9.84	0.20	ug/L	10.0		98.4	80-120			
Tetrachloroethene	10.1	0.20	ug/L	10.0		101	80-120			
Surrogate: 1,2-Dichloroethane-d4	5.38		ug/L	*5.00*		*108*	*80-129*			
Surrogate: Toluene-d8	4.93		ug/L	*5.00*		*98.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.08		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01		ug/L	*5.00*		*100*	*80-120*			
LCS Dup (BKK0357-BSD1)				Prepared: 11-Nov-2022 Analyzed: 11-Nov-2022 11:45						
Vinyl Chloride	9.69	0.20	ug/L	10.0		96.9	66-133	2.86	30	
cis-1,2-Dichloroethene	10.3	0.20	ug/L	10.0		103	80-121	2.65	30	
Trichloroethene	10.2	0.20	ug/L	10.0		102	80-120	3.14	30	
Tetrachloroethene	10.4	0.20	ug/L	10.0		104	80-120	2.48	30	
Surrogate: 1,2-Dichloroethane-d4	5.20		ug/L	*5.00*		*104*	*80-129*			
Surrogate: Toluene-d8	4.88		ug/L	*5.00*		*97.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.95		ug/L	*5.00*		*99.0*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKK0457 - EPA RSK-175

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0457-BLK1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 08:52						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1720		ug/L	*1800*		*95.7*	*62-122*			
LCS (BKK0457-BS1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 08:16						
Methane	642	0.65	ug/L	656		97.9	80-120			
Ethane	1230	1.23	ug/L	1230		100	80-120			
Ethene	1180	1.14	ug/L	1150		103	80-120			
Acetylene	1010	1.06	ug/L	1060		95.6	73-123			
Surrogate: Propane	1760		ug/L	*1800*		*97.6*	*62-122*			
LCS Dup (BKK0457-BSD1)				Prepared: 16-Nov-2022 Analyzed: 16-Nov-2022 08:34						
Methane	660	0.65	ug/L	656		101	80-120	2.69	30	
Ethane	1280	1.23	ug/L	1230		104	80-120	3.92	30	
Ethene	1220	1.14	ug/L	1150		106	80-120	3.30	30	
Acetylene	1010	1.06	ug/L	1060		95.7	73-123	0.15	30	
Surrogate: Propane	1780		ug/L	*1800*		*98.7*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKK0571 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0571-BLK1)						Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 15:22						
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
LCS (BKK0571-BS1)						Prepared: 18-Nov-2022 Analyzed: 22-Nov-2022 15:26						
Arsenic	75a	24.5	0.0373	0.200	ug/L	25.0		98.2	80-120			
Copper	63	26.1	0.173	0.500	ug/L	25.0		104	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BKK0662 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0662-BLK1)					Prepared: 22-Nov-2022 Analyzed: 28-Nov-2022 20:07							
Arsenic, Dissolved	75a	ND	0.0373	0.200	ug/L							U
Copper, Dissolved	63	ND	0.173	0.500	ug/L							U
LCS (BKK0662-BS1)					Prepared: 22-Nov-2022 Analyzed: 28-Nov-2022 20:12							
Arsenic, Dissolved	75a	24.4	0.0373	0.200	ug/L	25.0		97.6	80-120			
Copper, Dissolved	63	25.0	0.173	0.500	ug/L	25.0		100	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0585 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0585-BLK1)				Prepared: 18-Nov-2022 Analyzed: 18-Nov-2022 19:18							
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0585-BS1)				Prepared: 18-Nov-2022 Analyzed: 18-Nov-2022 19:38							
Sulfate	5.08	0.100	0.100	mg/L	5.00		102	90-110			
Duplicate (BKK0585-DUP1)		**Source: 22K0226-01**		Prepared: 18-Nov-2022 Analyzed: 18-Nov-2022 20:58							
Sulfate	0.587	0.100	0.100	mg/L		0.588			0.17	20	
Duplicate (BKK0585-DUP2)		**Source: 22K0226-01RE1**		Prepared: 18-Nov-2022 Analyzed: 21-Nov-2022 22:47							
Sulfate	ND	1.00	1.00	mg/L		ND					U
Matrix Spike (BKK0585-MS1)		**Source: 22K0226-01**		Prepared: 18-Nov-2022 Analyzed: 18-Nov-2022 21:18							
Sulfate	2.71	0.100	0.100	mg/L	2.01	0.588	105	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0758 - SM 5310 B-00

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0758-BLK2)				Prepared: 28-Nov-2022 Analyzed: 30-Nov-2022 23:47							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKK0758-BS2)				Prepared: 28-Nov-2022 Analyzed: 01-Dec-2022 00:11							
Total Organic Carbon	20.28	0.50	0.50	mg/L	20.00		101	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:12

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

07 December 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0311	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

2240311

LANDAU ASSOCIATES

Chain-of-Custody Record

☐ North Seattle (206) 631-8660 ☒ Tacoma (253) 926-2493 ☐ Olympia (360) 791-3178
☐ Spokane (509) 327-9737 ☐ Portland (503) 542-1080 ☐ _____

Date 11/16/22 Page 1 of 1

Turnaround Time: (Standard) Accelerated

Project Name DC Regional GW Project No. 025217002.032
Project Location/Event SWMU-17 / November 2022
Sampler's Name Simone Rodriguez
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com paul.m.marin@boeing.com, paul.d.yant@boeing.com

Special Handling Requirements:
Shipment Method:
Stored on ice: (Yes) No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOC-PCE,TCE,cDCE,VC (8260D) *	AMEE (ASK SOP-175 mod)	TOC (SM5310 C)	SULFATE (E300.0)	Total As (200.8 ICPMS)	Dissolved As (200.8 ICPMS) *	Testing Parameters
BDC-05-24-221116	11/16/22	825	AQ	9	X	X	X	X	X	X	
Tripblanks-221116	—	—	AQ	2	X	X					

Observations/Comments

___ Allow water samples to settle, collect aliquot from clear portion ☐
___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
(SMR) * Dissolved metal samples were field filtered

Other
* non-preserved (7-day)
* metals field filtered w/ 0.45 um filter

Relinquished by	Received by	Relinquished by	Received by
Signature [signature]	Signature [signature]	Signature	Signature
Printed Name Simone Rodriguez	Printed Name Phillip Bates	Printed Name	Printed Name
Company Landau Associates	Company AR	Company	Company
Date 11/16/22 Time 1024	Date 11/16/22 Time 10:24	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-05-24-221116	22K0311-01	Water	16-Nov-2022 08:25	16-Nov-2022 10:24
BDC-05-24-221116	22K0311-02	Water	16-Nov-2022 08:25	16-Nov-2022 10:24
Tripblanks-221116	22K0311-03	Water	16-Nov-2022 08:25	16-Nov-2022 10:24

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Total and Dissolved Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The sample duplicate relative percent difference (RPD) were within advisory control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: DC Regional GW Project Name: SWMU-17

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22K0311 Tracking No: _____ NA

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 10:24 4.6

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: T009702

Cooler Accepted by: PEB Date: 11/16/22 Time: 10:24

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ...	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: [signature] Date: 11/16/22 Time: 12:16 Labels checked by: _____

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

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

Additional Notes, Discrepancies, & Resolutions:

Bubble in
log to determine size

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 11/16/2022 12:24:26PM

WORK ORDER

22K0311

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH
22K0311-01 A	VOA Vial, Clear, 40 mL	
22K0311-01 B	VOA Vial, Clear, 40 mL	
22K0311-01 C	VOA Vial, Clear, 40 mL	
22K0311-01 D	VOA Vial, Clear, 40 mL, HCL	
22K0311-01 E	VOA Vial, Clear, 40 mL, HCL	
22K0311-01 F	Glass NM, Amber, 250 mL, 9N H2SO4	<2 PoS
22K0311-01 G	HDPE NM, 500 mL	
22K0311-01 H	HDPE NM, 1000 mL, 1:1 HNO3	<2 PoSS
22K0311-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2 PoSS
22K0311-03 A	VOA Vial, Clear, 40 mL	
22K0311-03 B	VOA Vial, Clear, 40 mL, HCL	

Preservation Confirmed By

11/16/22
Date

Reviewed By

Date

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

BDC-05-24-221116

22K0311-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/16/2022 08:25

Instrument: NT2 Analyst: LH — Analyzed: 11/17/2022 12:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0311-01 B

Preparation Batch: BKK0499 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.44	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*119*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*90.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

BDC-05-24-221116

22K0311-01 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/16/2022 08:25

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2022 09:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0311-01 D

Preparation Batch: BKK0498 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	9010	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*92.2*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

BDC-05-24-221116

22K0311-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 11/16/2022 08:25

Instrument: ICPMS1 Analyst: MCB — Analyzed: 12/03/2022 01:03

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0311-01 H 01

Preparation Batch: BKK0836 — Sample Size: 25 mL

Prepared: 11/30/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0373	0.200	2.79	ug/L	
Copper	7440-50-8	1	0.173	0.500	1.33	ug/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

BDC-05-24-221116

22K0311-01 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/16/2022 08:25

Instrument: IC930 Analyst: KLD — Analyzed: 11/18/2022 23:58

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0311-01 G

Preparation Batch: BKK0585 — Sample Size: 10 mL

Prepared: 11/18/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

BDC-05-24-221116

22K0311-01 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/16/2022 08:25

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/29/2022 12:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0311-01 F

Preparation Batch: BKK0758 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	6.97	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

BDC-05-24-221116

22K0311-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED — Sampled: 11/16/2022 08:25

Instrument: ICPMS1 Analyst: MCB — Analyzed: 11/26/2022 04:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M — Extract ID: 22K0311-02 A 01

Preparation Batch: BKK0662 — Sample Size: 25 mL

Prepared: 11/22/2022 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0373	0.200	2.40	ug/L	
Copper, Dissolved	7440-50-8	1	0.173	0.500	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Tripblanks-221116

22K0311-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/16/2022 08:25

Instrument: NT2 Analyst: LH — Analyzed: 11/17/2022 10:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0311-03 A

Preparation Batch: BKK0499 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*94.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Tripblanks-221116

22K0311-03 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/16/2022 08:25

Instrument: FID6 Analyst: LH — Analyzed: 11/17/2022 09:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0311-03 B

Preparation Batch: BKK0498 — Sample Size: 10 mL

Prepared: 11/17/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*104*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0499 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0499-BLK1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 09:15						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.26		ug/L	*5.00*		*105*	*80-129*			
Surrogate: Toluene-d8	4.76		ug/L	*5.00*		*95.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.53		ug/L	*5.00*		*90.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.02		ug/L	*5.00*		*100*	*80-120*			
LCS (BKK0499-BS1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 07:12						
Vinyl Chloride	8.73	0.20	ug/L	10.0		87.3	66-133			
cis-1,2-Dichloroethene	9.76	0.20	ug/L	10.0		97.6	80-121			
Trichloroethene	10.1	0.20	ug/L	10.0		101	80-120			
Tetrachloroethene	10.8	0.20	ug/L	10.0		108	80-120			
Surrogate: 1,2-Dichloroethane-d4	5.18		ug/L	*5.00*		*104*	*80-129*			
Surrogate: Toluene-d8	4.83		ug/L	*5.00*		*96.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.86		ug/L	*5.00*		*97.2*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.07		ug/L	*5.00*		*101*	*80-120*			
LCS Dup (BKK0499-BSD1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 08:34						
Vinyl Chloride	9.51	0.20	ug/L	10.0		95.1	66-133	8.57	30	
cis-1,2-Dichloroethene	10.5	0.20	ug/L	10.0		105	80-121	7.30	30	
Trichloroethene	10.6	0.20	ug/L	10.0		106	80-120	4.14	30	
Tetrachloroethene	11.0	0.20	ug/L	10.0		110	80-120	2.41	30	
Surrogate: 1,2-Dichloroethane-d4	4.94		ug/L	*5.00*		*98.9*	*80-129*			
Surrogate: Toluene-d8	4.94		ug/L	*5.00*		*98.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.77		ug/L	*5.00*		*95.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01		ug/L	*5.00*		*100*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKK0498 - EPA RSK-175

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0498-BLK1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 08:43						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1740		ug/L	*1800*		*96.6*	*62-122*			
LCS (BKK0498-BS1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 07:35						
Methane	630	0.65	ug/L	656		96.0	80-120			
Ethane	1230	1.23	ug/L	1230		99.6	80-120			
Ethene	1170	1.14	ug/L	1150		101	80-120			
Acetylene	972	1.06	ug/L	1060		91.7	73-123			
Surrogate: Propane	1750		ug/L	*1800*		*97.4*	*62-122*			
LCS Dup (BKK0498-BSD1)				Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 07:54						
Methane	577	0.65	ug/L	656		87.9	80-120	8.79	30	
Ethane	1090	1.23	ug/L	1230		88.8	80-120	11.50	30	
Ethene	1050	1.14	ug/L	1150		91.1	80-120	10.80	30	
Acetylene	878	1.06	ug/L	1060		82.8	73-123	10.20	30	
Surrogate: Propane	1680		ug/L	*1800*		*93.3*	*62-122*			
Duplicate (BKK0498-DUP1)	**Source: 22K0311-01**			Prepared: 17-Nov-2022 Analyzed: 17-Nov-2022 10:11						
Methane	8600	0.65	ug/L		9010			4.58	30	
Ethane	ND	1.23	ug/L		ND					U
Ethene	ND	1.14	ug/L		ND					U
Acetylene	ND	1.06	ug/L		ND					U
Surrogate: Propane	1640		ug/L	*1800*	*1660*	*91.0*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BKK0836 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0836-BLK1)						Prepared: 30-Nov-2022 Analyzed: 02-Dec-2022 19:33						
Arsenic	75a	ND	0.0373	0.200	ug/L							U
Copper	63	ND	0.173	0.500	ug/L							U
LCS (BKK0836-BS1)						Prepared: 30-Nov-2022 Analyzed: 02-Dec-2022 19:38						
Arsenic	75a	25.6	0.0373	0.200	ug/L	25.0		102	80-120			
Copper	63	25.3	0.173	0.500	ug/L	25.0		101	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BKK0662 - EPA 200.8 UCT-KED

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0662-BLK1)						Prepared: 22-Nov-2022 Analyzed: 28-Nov-2022 20:07						
Arsenic, Dissolved	75a	ND	0.0373	0.200	ug/L							U
Copper, Dissolved	63	ND	0.173	0.500	ug/L							U
LCS (BKK0662-BS1)						Prepared: 22-Nov-2022 Analyzed: 28-Nov-2022 20:12						
Arsenic, Dissolved	75a	24.4	0.0373	0.200	ug/L	25.0		97.6	80-120			
Copper, Dissolved	63	25.0	0.173	0.500	ug/L	25.0		100	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0585 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0585-BLK1)				Prepared: 18-Nov-2022 Analyzed: 18-Nov-2022 19:18							
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0585-BS1)				Prepared: 18-Nov-2022 Analyzed: 18-Nov-2022 19:38							
Sulfate	5.08	0.100	0.100	mg/L	5.00		102	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0758 - SM 5310 B-00

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0758-BLK2)				Prepared: 28-Nov-2022 Analyzed: 30-Nov-2022 23:47							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKK0758-BS2)				Prepared: 28-Nov-2022 Analyzed: 01-Dec-2022 00:11							
Total Organic Carbon	20.28	0.50	0.50	mg/L	20.00		101	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
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1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	07-Dec-2022 14:37

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
M	Estimated value for a GC/MS analyte detected and confirmed by an analyst but with low spectral match parameters.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

03 June 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22E0172	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22E0172

LANDAU ASSOCIATES

Chain-of-Custody Record

☒ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☐ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 5/9/22
Page 1 of 1

Turnaround Time:
Standard ✓
Accelerated _____

Project Name LDC Regional GW Project No. 025217.001.032.032
Project Location/Event SWMU-20 / Mar 2022
Sampler's Name Armando Huerta / Joe Marin
Project Contact Chris Kimmel / Jen Parsons
Send Results To Chris Kimmel / Jen Parsonss

Special Handling Requirements: _____
Shipment Method: DROP OFF
Stored on ice: (Yes) / No

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (SW8260D) - Non Preserved	MEE (RSK-175 Mod) - Preserved	TOC (SM5310C)	Sulfate (EPA 300.0)	Observations/Comments
Trip Blanks-	5/9/22	—	AQ	4	X	X			
MW-6B-220509	5/9/22	911	AQ	7	X	X	X	X	
MW-22A-220509	5/9/22	914	AQ	7	X	X	X	X	
MW-6A-220509	5/9/22	949	AQ	7	X	X	X	X	
MW-15C-220509	5/9/22	1020	AQ	3	X				
MW-9A-220509	5/9/22	1037	AQ	7	X	X	X	X	
BDC-DUP1-220509	5/9/22	1039	AQ	7	X	X	X	X	
MW-10C-220509	5/9/22	1111	AQ	3	X				
MW-11A-220509	5/9/22	1139	AQ	3	X				
MW-14C-220509	5/9/22	1114	AQ	3	X				
MW-20C-220509	5/9/22	1216	AQ	3	X				
MW-16A-220509	5/9/22	1452	AQ	3	X				
MW-16C-220509	5/9/22	1455	AQ	3	X				
MW-13A-220509	5/9/22	1407	AQ	3	X				
MW-13C-220509	5/9/22	1406	AQ	3	X				

Observations/Comments

☐ Allow water samples to settle, collect aliquot from clear portion ☐
☐ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐
☐ Dissolved metal samples were field filtered

Other Methane, Ethane, Ethene

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Armando Huerta	Printed Name Samuel Beasley	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 5/9/22 Time 1656	Date 5/9/22 Time 16:56	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Trip Blanks	22E0172-01	Water	09-May-2022 09:11	09-May-2022 16:56
MW-6B-220509	22E0172-02	Water	09-May-2022 09:11	09-May-2022 16:56
MW-22A-220509	22E0172-03	Water	09-May-2022 09:14	09-May-2022 16:56
MW-6A-220509	22E0172-04	Water	09-May-2022 09:49	09-May-2022 16:56
MW-15C-220509	22E0172-05	Water	09-May-2022 10:20	09-May-2022 16:56
MW-9A-220509	22E0172-06	Water	09-May-2022 10:37	09-May-2022 16:56
BDC-DUP1-220509	22E0172-07	Water	09-May-2022 10:39	09-May-2022 16:56
MW-10C-220509	22E0172-08	Water	09-May-2022 11:11	09-May-2022 16:56
MW-11A-220509	22E0172-09	Water	09-May-2022 11:39	09-May-2022 16:56
MW-14C-220509	22E0172-10	Water	09-May-2022 11:14	09-May-2022 16:56
MW-20C-220509	22E0172-11	Water	09-May-2022 12:16	09-May-2022 16:56
MW-16A-220509	22E0172-12	Water	09-May-2022 14:52	09-May-2022 16:56
MW-16C-220509	22E0172-13	Water	09-May-2022 14:55	09-May-2022 16:56
MW-13A-220509	22E0172-14	Water	09-May-2022 14:07	09-May-2022 16:56
MW-13C-220509	22E0172-15	Water	09-May-2022 14:06	09-May-2022 16:56

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 5/11/2022 11:35:32AM

WORK ORDER

22E0172

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH
22E0172-01 A	VOA Vial, Clear, 40 mL, HCL	
22E0172-01 B	VOA Vial, Clear, 40 mL, HCL	
22E0172-01 C	VOA Vial, Clear, 40 mL, HCL	
22E0172-01 D	VOA Vial, Clear, 40 mL, HCL	
22E0172-02 A	HDPE NM, 1000 mL	
22E0172-02 B	Glass NM, Amber, 250 mL, 9N H2SO4	L2 pass
22E0172-02 C	VOA Vial, Clear, 40 mL	
22E0172-02 D	VOA Vial, Clear, 40 mL	
22E0172-02 E	VOA Vial, Clear, 40 mL	
22E0172-02 F	VOA Vial, Clear, 40 mL, HCL	
22E0172-02 G	VOA Vial, Clear, 40 mL, HCL	
22E0172-03 A	HDPE NM, 1000 mL	
22E0172-03 B	Glass NM, Amber, 250 mL, 9N H2SO4	L2 pass
22E0172-03 C	VOA Vial, Clear, 40 mL	
22E0172-03 D	VOA Vial, Clear, 40 mL	
22E0172-03 E	VOA Vial, Clear, 40 mL	
22E0172-03 F	VOA Vial, Clear, 40 mL, HCL	
22E0172-03 G	VOA Vial, Clear, 40 mL, HCL	
22E0172-04 A	HDPE NM, 1000 mL	
22E0172-04 B	Glass NM, Amber, 250 mL, 9N H2SO4	L2 pass
22E0172-04 C	VOA Vial, Clear, 40 mL	
22E0172-04 D	VOA Vial, Clear, 40 mL	
22E0172-04 E	VOA Vial, Clear, 40 mL	
22E0172-04 F	VOA Vial, Clear, 40 mL, HCL	
22E0172-04 G	VOA Vial, Clear, 40 mL, HCL	
22E0172-05 A	VOA Vial, Clear, 40 mL	
22E0172-05 B	VOA Vial, Clear, 40 mL	
22E0172-05 C	VOA Vial, Clear, 40 mL	BUBBLE
22E0172-06 A	HDPE NM, 1000 mL	
22E0172-06 B	Glass NM, Amber, 250 mL, 9N H2SO4	L2 pass
22E0172-06 C	VOA Vial, Clear, 40 mL	
22E0172-06 D	VOA Vial, Clear, 40 mL	
22E0172-06 E	VOA Vial, Clear, 40 mL	
22E0172-06 F	VOA Vial, Clear, 40 mL, HCL	

Reviewed By

Date

WORK ORDER

22E0172

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: Boeing Regional GW Developmental Center**

22E0172-06 G	VOA Vial, Clear, 40 mL, HCL	
22E0172-07 A	HDPE NM, 1000 mL	
22E0172-07 B	Glass NM, Amber, 250 mL, 9N H2SO4	12pass
22E0172-07 C	VOA Vial, Clear, 40 mL	
22E0172-07 D	VOA Vial, Clear, 40 mL	
22E0172-07 E	VOA Vial, Clear, 40 mL	
22E0172-07 F	VOA Vial, Clear, 40 mL, HCL	
22E0172-07 G	VOA Vial, Clear, 40 mL, HCL	
22E0172-08 A	VOA Vial, Clear, 40 mL	
22E0172-08 B	VOA Vial, Clear, 40 mL	
22E0172-08 C	VOA Vial, Clear, 40 mL	
22E0172-09 A	VOA Vial, Clear, 40 mL	
22E0172-09 B	VOA Vial, Clear, 40 mL	
22E0172-09 C	VOA Vial, Clear, 40 mL	
22E0172-10 A	VOA Vial, Clear, 40 mL	
22E0172-10 B	VOA Vial, Clear, 40 mL	
22E0172-10 C	VOA Vial, Clear, 40 mL	Bubble
22E0172-11 A	VOA Vial, Clear, 40 mL	
22E0172-11 B	VOA Vial, Clear, 40 mL	
22E0172-11 C	VOA Vial, Clear, 40 mL	
22E0172-12 A	VOA Vial, Clear, 40 mL	
22E0172-12 B	VOA Vial, Clear, 40 mL	
22E0172-12 C	VOA Vial, Clear, 40 mL	
22E0172-13 A	VOA Vial, Clear, 40 mL	
22E0172-13 B	VOA Vial, Clear, 40 mL	
22E0172-13 C	VOA Vial, Clear, 40 mL	
22E0172-14 A	VOA Vial, Clear, 40 mL	
22E0172-14 B	VOA Vial, Clear, 40 mL	
22E0172-14 C	VOA Vial, Clear, 40 mL	
22E0172-15 A	VOA Vial, Clear, 40 mL	Bubble
22E0172-15 B	VOA Vial, Clear, 40 mL	Bubble
22E0172-15 C	VOA Vial, Clear, 40 mL	

VB
Preservation Confirmed By

5/11/22
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: DC regional GW

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 22E0172

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)	1.6 1.8	
Time		

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90097708

Cooler Accepted by: LB Date: 5/9/22 Time: 16:56

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers? LB 5-11-22		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	5/5/22	

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: LB Date: 5-11-22 Time: 10:33 Labels checked by:

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Trip Blanks

22E0172-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 16:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-01 A

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	1.24	ug/L	
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Trip Blanks

22E0172-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 05/09/2022 09:11
Analyzed: 05/11/2022 16:49

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Trip Blanks

22E0172-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 16:49

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*99.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Trip Blanks

22E0172-01 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/09/2022 09:11

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 08:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-01 B

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*71.9*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6B-220509

22E0172-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 17:33

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-02 D

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.94	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	6.03	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.63	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6B-220509

22E0172-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 17:33

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	6.72	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6B-220509

22E0172-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 17:33

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6B-220509

22E0172-02 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/09/2022 09:11

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 09:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-02 F

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3570	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*47.9*	*%*	*

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6B-220509

22E0172-02 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/09/2022 09:11
Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/23/2022 20:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-02 B
Preparation Batch: BKE0596 — Sample Size: 20 mL
Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	21.17	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6B-220509

22E0172-02RE2 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 09:11

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 22:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-02RE2 A

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	1.31	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-22A-220509

22E0172-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:14

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 17:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-03 C

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.45	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.47	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	0.26	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

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22E0172-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:14

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 17:55

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	2.02	ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	1.23	ug/L	
o-Xylene	95-47-6	1	0.20	2.30	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	0.36	ug/L	
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	0.62	ug/L	
1,2,4-Trimethylbenzene	95-63-6	1	0.20	5.36	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	0.20	ug/L	
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	10.7	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-22A-220509

22E0172-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:14

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 17:55

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*96.3*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-22A-220509

22E0172-03 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/09/2022 09:14

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 15:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-03 F

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5410	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*82.1*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-22A-220509

22E0172-03 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/09/2022 09:14

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/23/2022 20:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-03 B

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	22.84	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-22A-220509

22E0172-03RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 09:14

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 23:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-03RE1 A

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.732	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6A-220509

22E0172-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:49

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 18:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-04 C

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.52	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	5.01	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.71	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.37	ug/L	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6A-220509

22E0172-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:49

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 18:17

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*97.1*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.5*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6A-220509

22E0172-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 09:49

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 18:17

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*98.3*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6A-220509

22E0172-04 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/09/2022 09:49

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 13:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-04 F

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	303	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*72.9*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6A-220509

22E0172-04 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/09/2022 09:49
Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/23/2022 21:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-04 B
Preparation Batch: BKE0596 — Sample Size: 20 mL
Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	13.53	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-6A-220509

22E0172-04RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 09:49

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 23:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-04RE1 A

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	34.2	mg/L	D

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-15C-220509

22E0172-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:20

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 18:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-05 B

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.91	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.49	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.61	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-15C-220509

22E0172-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:20

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 18:39

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-15C-220509

22E0172-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:20

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 18:39

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.4*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:37

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 19:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-06 C

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.41	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:37

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 19:24

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	0.47	ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	1.04	ug/L	
o-Xylene	95-47-6	1	0.20	1.05	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	0.27	ug/L	
1,2,4-Trimethylbenzene	95-63-6	1	0.20	1.65	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	0.24	ug/L	
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	149	ug/L	E
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*94.5*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:37

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 19:24

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.8*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/09/2022 10:37

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 15:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-06 F

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3460	ug/L	
Ethane	74-84-0	1	1.23	721	ug/L	
Ethene	74-85-1	1	1.14	34.9	ug/L	
Surrogate: Propane			*62-122 %*	*82.8*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/09/2022 10:37

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/23/2022 21:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-06 B

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	10.43	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:37

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 13:13

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-06RE1 D

Preparation Batch: BKE0321 — Sample Size: 2 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	2.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	1.00	ND	ug/L	U
Bromomethane	74-83-9	1	5.00	ND	ug/L	U
Chloroethane	75-00-3	1	1.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	1.00	ND	ug/L	U
Acrolein	107-02-8	1	25.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	1.00	ND	ug/L	U
Acetone	67-64-1	1	25.0	50.2	ug/L	
1,1-Dichloroethene	75-35-4	1	1.00	ND	ug/L	U
Iodomethane	74-88-4	1	5.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	5.00	7.32	ug/L	
Acrylonitrile	107-13-1	1	5.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	1.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	1.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	1.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	1.00	ND	ug/L	U
2-Butanone	78-93-3	1	25.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	1.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	1.00	ND	ug/L	U
Chloroform	67-66-3	1	1.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	1.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	1.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	1.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	1.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	1.00	ND	ug/L	U
Benzene	71-43-2	1	1.00	ND	ug/L	U
Trichloroethene	79-01-6	1	1.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	1.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	1.00	ND	ug/L	U
Dibromomethane	74-95-3	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	25.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	1.00	ND	ug/L	U
Toluene	108-88-3	1	1.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	1.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:37

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 13:13

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	25.0	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	1.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	1.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	1.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	1.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	1.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	1.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	1.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	1.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	2.00	ND	ug/L	U
o-Xylene	95-47-6	1	1.00	1.28	ug/L	
Styrene	100-42-5	1	1.00	ND	ug/L	U
Bromoform	75-25-2	1	1.00	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	1.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	2.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	5.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	1.00	ND	ug/L	U
Bromobenzene	108-86-1	1	1.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	1.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	1.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	1.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	1.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	1.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	1.00	1.92	ug/L	
s-Butylbenzene	135-98-8	1	1.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	1.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	1.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	2.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	2.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	10.0	ND	ug/L	U
Naphthalene	91-20-3	1	2.50	245	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	2.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:37

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 13:13

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*96.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-9A-220509

22E0172-06RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 10:37

Instrument: IC930 Analyst: BF — Analyzed: 05/31/2022 23:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-06RE1 A

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.384	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 13:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-07 D

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.44	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 13:35

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	0.49	ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	1.02	ug/L	
o-Xylene	95-47-6	1	0.20	1.09	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	0.28	ug/L	
1,2,4-Trimethylbenzene	95-63-6	1	0.20	1.66	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	0.22	ug/L	
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	158	ug/L	E
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*105*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 13:35

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*104*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*98.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 05/09/2022 10:39

Instrument: FID6 Analyst: LH — Analyzed: 05/12/2022 14:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-07 F

Preparation Batch: BKE0307 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3600	ug/L	
Ethane	74-84-0	1	1.23	740	ug/L	
Ethene	74-85-1	1	1.14	32.8	ug/L	
Surrogate: Propane			*62-122 %*	*82.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 05/09/2022 10:39

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 05/23/2022 22:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-07 B

Preparation Batch: BKE0596 — Sample Size: 20 mL

Prepared: 05/23/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	9.94	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 19:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-07RE1 E

Preparation Batch: BKE0299 — Sample Size: 0.5 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	10.0	ND	ug/L	U
Vinyl Chloride	75-01-4	1	4.00	ND	ug/L	U
Bromomethane	74-83-9	1	20.0	ND	ug/L	U
Chloroethane	75-00-3	1	4.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	4.00	ND	ug/L	U
Acrolein	107-02-8	1	100	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	4.00	ND	ug/L	U
Acetone	67-64-1	1	100	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	4.00	ND	ug/L	U
Iodomethane	74-88-4	1	20.0	ND	ug/L	U
Methylene Chloride	75-09-2	1	20.0	ND	ug/L	U
Acrylonitrile	107-13-1	1	20.0	ND	ug/L	U
Carbon Disulfide	75-15-0	1	4.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	4.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	4.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	4.00	ND	ug/L	U
2-Butanone	78-93-3	1	100	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	4.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	4.00	ND	ug/L	U
Chloroform	67-66-3	1	4.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	4.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	4.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	4.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	4.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	4.00	ND	ug/L	U
Benzene	71-43-2	1	4.00	ND	ug/L	U
Trichloroethene	79-01-6	1	4.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	4.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	4.00	ND	ug/L	U
Dibromomethane	74-95-3	1	4.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	100	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	4.00	ND	ug/L	U
Toluene	108-88-3	1	4.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	4.00	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 19:01

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	100	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	4.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	4.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	4.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	4.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	4.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	4.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	4.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	4.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	8.00	ND	ug/L	U
o-Xylene	95-47-6	1	4.00	ND	ug/L	U
Styrene	100-42-5	1	4.00	ND	ug/L	U
Bromoform	75-25-2	1	4.00	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	4.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	10.0	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	20.0	ND	ug/L	U
n-Propylbenzene	103-65-1	1	4.00	ND	ug/L	U
Bromobenzene	108-86-1	1	4.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	4.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	4.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	4.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	4.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	4.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	4.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	4.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	4.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	4.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	4.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	4.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	4.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	10.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	40.0	ND	ug/L	U
Naphthalene	91-20-3	1	10.0	184	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	10.0	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.9*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 10:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 19:01

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*98.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

BDC-DUP1-220509

22E0172-07RE1 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 05/09/2022 10:39

Instrument: IC930 Analyst: BF — Analyzed: 06/01/2022 00:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22E0172-07RE1 A

Preparation Batch: BKE0333 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.321	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-10C-220509

22E0172-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 12:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-08 B

Preparation Batch: BKE0321 — Sample Size: 10 mL

Prepared: 05/12/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.51	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-10C-220509

22E0172-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 12:48

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-10C-220509

22E0172-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:11

Instrument: NT3 Analyst: PKC — Analyzed: 05/12/2022 12:48

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.0*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-11A-220509

22E0172-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-09 A

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	3.75	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.26	ug/L	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-11A-220509

22E0172-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:08

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	0.27	ug/L	
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	2.31	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-11A-220509

22E0172-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:39

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:08

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-14C-220509

22E0172-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:14

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-10 A

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.31	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-14C-220509

22E0172-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 05/09/2022 11:14
Analyzed: 05/11/2022 20:30

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-14C-220509

22E0172-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 11:14

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:30

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*99.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.4*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-20C-220509

22E0172-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:16

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-11 A

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.43	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-20C-220509

22E0172-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:16

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:52

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-20C-220509

22E0172-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 12:16

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 20:52

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*99.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*102*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-16A-220509

22E0172-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:52

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-12 A

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.25	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.29	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-16A-220509

22E0172-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:52

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:14

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*99.7*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-16A-220509

22E0172-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:52

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:14

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*97.1*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-16C-220509

22E0172-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:55

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-13 B

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.78	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	1.44	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-16C-220509

22E0172-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:55

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:36

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-16C-220509

22E0172-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:55

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:36

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.3*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-13A-220509

22E0172-14 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:07

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-14 A

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.41	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.83	ug/L	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-13A-220509

22E0172-14 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:07

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:59

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	2.30	ug/L	
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-13A-220509

22E0172-14 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:07

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 21:59

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*98.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*95.5*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-13C-220509

22E0172-15 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:06

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 22:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22E0172-15 C

Preparation Batch: BKE0299 — Sample Size: 10 mL

Prepared: 05/11/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.22	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.30	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-13C-220509

22E0172-15 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:06

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 22:21

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

MW-13C-220509

22E0172-15 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 05/09/2022 14:06

Instrument: NT3 Analyst: PKC — Analyzed: 05/11/2022 22:21

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*97.0*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0299 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0299-BLK1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 16:27						
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0299 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0299-BLK1)			Prepared: 11-May-2022 Analyzed: 11-May-2022 16:27							
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	2.00	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0299 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0299-BLK1)				Prepared: 11-May-2022		Analyzed: 11-May-2022 16:27				
Surrogate: 1,2-Dichloroethane-d4	5.14		ug/L	*5.00*		*103*	*80-129*			
Surrogate: Toluene-d8	4.95		ug/L	*5.00*		*99.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.02		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.98		ug/L	*5.00*		*99.7*	*80-120*			
LCS (BKE0299-BS1)				Prepared: 11-May-2022		Analyzed: 11-May-2022 15:20				
Chloromethane	10.8	0.50	ug/L	10.0		108	60-138			
Vinyl Chloride	10.3	0.20	ug/L	10.0		103	66-133			
Bromomethane	10.3	1.00	ug/L	10.0		103	72-131			
Chloroethane	10.6	0.20	ug/L	10.0		106	60-155			
Trichlorofluoromethane	10.7	0.20	ug/L	10.0		107	62-141			
Acrolein	51.9	5.00	ug/L	50.0		104	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.79	0.20	ug/L	10.0		97.9	76-129			
Acetone	48.8	5.00	ug/L	50.0		97.6	58-142			
1,1-Dichloroethene	10.2	0.20	ug/L	10.0		102	69-135			
Iodomethane	10.5	1.00	ug/L	10.0		105	56-147			
Methylene Chloride	10.0	1.00	ug/L	10.0		100	65-135			
Acrylonitrile	10.2	1.00	ug/L	10.0		102	64-134			
Carbon Disulfide	9.98	0.20	ug/L	10.0		99.8	78-125			
trans-1,2-Dichloroethene	10.0	0.20	ug/L	10.0		100	78-128			
Vinyl Acetate	10.8	0.20	ug/L	10.0		108	55-138			
1,1-Dichloroethane	10.4	0.20	ug/L	10.0		104	76-124			
2-Butanone	52.6	5.00	ug/L	50.0		105	61-140			
2,2-Dichloropropane	10.5	0.20	ug/L	10.0		105	66-147			
cis-1,2-Dichloroethene	10.6	0.20	ug/L	10.0		106	80-121			
Chloroform	10.3	0.20	ug/L	10.0		103	80-122			
Bromochloromethane	10.6	0.20	ug/L	10.0		106	80-121			
1,1,1-Trichloroethane	10.5	0.20	ug/L	10.0		105	79-123			
1,1-Dichloropropene	9.93	0.20	ug/L	10.0		99.3	80-127			
Carbon tetrachloride	10.2	0.20	ug/L	10.0		102	53-137			
1,2-Dichloroethane	10.7	0.20	ug/L	10.0		107	75-123			
Benzene	10.5	0.20	ug/L	10.0		105	80-120			
Trichloroethene	9.95	0.20	ug/L	10.0		99.5	80-120			
1,2-Dichloropropane	9.91	0.20	ug/L	10.0		99.1	80-120			
Bromodichloromethane	9.93	0.20	ug/L	10.0		99.3	80-121			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0299 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0299-BS1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 15:20						
Dibromomethane	9.94	0.20	ug/L	10.0		99.4	80-120			
4-Methyl-2-Pentanone	53.6	5.00	ug/L	50.0		107	67-133			
cis-1,3-Dichloropropene	10.5	0.20	ug/L	10.0		105	80-124			
Toluene	10.4	0.20	ug/L	10.0		104	80-120			
trans-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	71-127			
2-Hexanone	53.9	5.00	ug/L	50.0		108	69-133			
1,1,2-Trichloroethane	10.5	0.20	ug/L	10.0		105	80-121			
1,3-Dichloropropane	10.5	0.20	ug/L	10.0		105	80-120			
Tetrachloroethene	10.5	0.20	ug/L	10.0		105	80-120			
Dibromochloromethane	10.5	0.20	ug/L	10.0		105	65-135			
1,2-Dibromoethane	10.5	0.20	ug/L	10.0		105	80-121			
Chlorobenzene	10.3	0.20	ug/L	10.0		103	80-120			
Ethylbenzene	10.3	0.20	ug/L	10.0		103	80-120			
1,1,1,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	20.7	0.40	ug/L	20.0		103	80-121			
o-Xylene	10.2	0.20	ug/L	10.0		102	80-121			
Styrene	10.8	0.20	ug/L	10.0		108	80-124			
Bromoform	10.1	0.20	ug/L	10.0		101	51-134			
1,1,2,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	77-123			
1,2,3-Trichloropropane	10.1	0.50	ug/L	10.0		101	76-125			
trans-1,4-Dichloro 2-Butene	9.81	1.00	ug/L	10.0		98.1	55-129			
n-Propylbenzene	10.3	0.20	ug/L	10.0		103	78-130			
Bromobenzene	10.0	0.20	ug/L	10.0		100	80-120			
Isopropyl Benzene	10.4	0.20	ug/L	10.0		104	80-128			
2-Chlorotoluene	9.88	0.20	ug/L	10.0		98.8	78-122			
4-Chlorotoluene	10.1	0.20	ug/L	10.0		101	80-121			
t-Butylbenzene	10.2	0.20	ug/L	10.0		102	78-125			
1,3,5-Trimethylbenzene	10.5	0.20	ug/L	10.0		105	80-129			
1,2,4-Trimethylbenzene	10.3	0.20	ug/L	10.0		103	80-127			
s-Butylbenzene	10.4	0.20	ug/L	10.0		104	78-129			
4-Isopropyl Toluene	10.3	0.20	ug/L	10.0		103	79-130			
1,3-Dichlorobenzene	9.86	0.20	ug/L	10.0		98.6	80-120			
1,4-Dichlorobenzene	9.87	0.20	ug/L	10.0		98.7	80-120			
n-Butylbenzene	10.1	0.20	ug/L	10.0		101	74-129			
1,2-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0299 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0299-BS1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 15:20						
1,2-Dibromo-3-chloropropane	9.91	0.50	ug/L	10.0		99.1	62-123			
1,2,4-Trichlorobenzene	10.2	0.50	ug/L	10.0		102	64-124			
Hexachloro-1,3-Butadiene	9.86	2.00	ug/L	10.0		98.6	58-123			
Naphthalene	10.5	0.50	ug/L	10.0		105	50-134			
1,2,3-Trichlorobenzene	9.94	0.50	ug/L	10.0		99.4	49-133			
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.13		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.90		ug/L	*5.00*		*98.1*	*80-120*			
LCS Dup (BKE0299-BSD1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 15:42						
Chloromethane	9.60	0.50	ug/L	10.0		96.0	60-138	11.60	30	
Vinyl Chloride	9.26	0.20	ug/L	10.0		92.6	66-133	10.90	30	
Bromomethane	9.42	1.00	ug/L	10.0		94.2	72-131	9.37	30	
Chloroethane	9.52	0.20	ug/L	10.0		95.2	60-155	10.50	30	
Trichlorofluoromethane	9.92	0.20	ug/L	10.0		99.2	62-141	7.58	30	
Acrolein	47.1	5.00	ug/L	50.0		94.1	52-190	9.78	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.29	0.20	ug/L	10.0		92.9	76-129	5.23	30	
Acetone	44.0	5.00	ug/L	50.0		88.0	58-142	10.40	30	
1,1-Dichloroethene	9.16	0.20	ug/L	10.0		91.6	69-135	10.60	30	
Iodomethane	9.26	1.00	ug/L	10.0		92.6	56-147	12.10	30	
Methylene Chloride	8.58	1.00	ug/L	10.0		85.8	65-135	15.40	30	
Acrylonitrile	8.88	1.00	ug/L	10.0		88.8	64-134	13.40	30	
Carbon Disulfide	8.88	0.20	ug/L	10.0		88.8	78-125	11.60	30	
trans-1,2-Dichloroethene	9.25	0.20	ug/L	10.0		92.5	78-128	8.08	30	
Vinyl Acetate	9.78	0.20	ug/L	10.0		97.8	55-138	10.40	30	
1,1-Dichloroethane	9.12	0.20	ug/L	10.0		91.2	76-124	12.70	30	
2-Butanone	46.7	5.00	ug/L	50.0		93.4	61-140	12.00	30	
2,2-Dichloropropane	9.12	0.20	ug/L	10.0		91.2	66-147	13.80	30	
cis-1,2-Dichloroethene	9.38	0.20	ug/L	10.0		93.8	80-121	12.10	30	
Chloroform	9.42	0.20	ug/L	10.0		94.2	80-122	8.77	30	
Bromochloromethane	9.23	0.20	ug/L	10.0		92.3	80-121	13.90	30	
1,1,1-Trichloroethane	9.42	0.20	ug/L	10.0		94.2	79-123	11.20	30	
1,1-Dichloropropene	9.22	0.20	ug/L	10.0		92.2	80-127	7.43	30	
Carbon tetrachloride	9.26	0.20	ug/L	10.0		92.6	53-137	9.90	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0299 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0299-BSD1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 15:42						
1,2-Dichloroethane	9.48	0.20	ug/L	10.0		94.8	75-123	12.40	30	
Benzene	9.58	0.20	ug/L	10.0		95.8	80-120	9.57	30	
Trichloroethene	9.11	0.20	ug/L	10.0		91.1	80-120	8.89	30	
1,2-Dichloropropane	9.15	0.20	ug/L	10.0		91.5	80-120	7.97	30	
Bromodichloromethane	9.32	0.20	ug/L	10.0		93.2	80-121	6.29	30	
Dibromomethane	8.92	0.20	ug/L	10.0		89.2	80-120	10.80	30	
4-Methyl-2-Pentanone	48.4	5.00	ug/L	50.0		96.8	67-133	10.20	30	
cis-1,3-Dichloropropene	9.60	0.20	ug/L	10.0		96.0	80-124	8.86	30	
Toluene	9.58	0.20	ug/L	10.0		95.8	80-120	7.94	30	
trans-1,3-Dichloropropene	9.82	0.20	ug/L	10.0		98.2	71-127	8.80	30	
2-Hexanone	48.1	5.00	ug/L	50.0		96.1	69-133	11.50	30	
1,1,2-Trichloroethane	9.52	0.20	ug/L	10.0		95.2	80-121	9.50	30	
1,3-Dichloropropane	9.29	0.20	ug/L	10.0		92.9	80-120	12.60	30	
Tetrachloroethene	9.00	0.20	ug/L	10.0		90.0	80-120	15.40	30	
Dibromochloromethane	9.21	0.20	ug/L	10.0		92.1	65-135	12.90	30	
1,2-Dibromoethane	9.35	0.20	ug/L	10.0		93.5	80-121	11.20	30	
Chlorobenzene	9.34	0.20	ug/L	10.0		93.4	80-120	9.92	30	
Ethylbenzene	9.12	0.20	ug/L	10.0		91.2	80-120	12.40	30	
1,1,1,2-Tetrachloroethane	9.10	0.20	ug/L	10.0		91.0	80-120	12.60	30	
m,p-Xylene	18.5	0.40	ug/L	20.0		92.6	80-121	10.90	30	
o-Xylene	8.99	0.20	ug/L	10.0		89.9	80-121	12.60	30	
Styrene	9.81	0.20	ug/L	10.0		98.1	80-124	9.99	30	
Bromoform	8.82	0.20	ug/L	10.0		88.2	51-134	14.00	30	
1,1,2,2-Tetrachloroethane	8.89	0.20	ug/L	10.0		88.9	77-123	14.20	30	
1,2,3-Trichloropropane	8.84	0.50	ug/L	10.0		88.4	76-125	13.70	30	
trans-1,4-Dichloro 2-Butene	9.17	1.00	ug/L	10.0		91.7	55-129	6.75	30	
n-Propylbenzene	9.17	0.20	ug/L	10.0		91.7	78-130	12.00	30	
Bromobenzene	8.92	0.20	ug/L	10.0		89.2	80-120	11.60	30	
Isopropyl Benzene	9.19	0.20	ug/L	10.0		91.9	80-128	12.20	30	
2-Chlorotoluene	8.78	0.20	ug/L	10.0		87.8	78-122	11.70	30	
4-Chlorotoluene	8.55	0.20	ug/L	10.0		85.5	80-121	16.40	30	
t-Butylbenzene	9.21	0.20	ug/L	10.0		92.1	78-125	9.96	30	
1,3,5-Trimethylbenzene	9.11	0.20	ug/L	10.0		91.1	80-129	13.90	30	
1,2,4-Trimethylbenzene	9.06	0.20	ug/L	10.0		90.6	80-127	13.00	30	
s-Butylbenzene	9.18	0.20	ug/L	10.0		91.8	78-129	12.30	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0299 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0299-BSD1)				Prepared: 11-May-2022 Analyzed: 11-May-2022 15:42						
4-Isopropyl Toluene	9.14	0.20	ug/L	10.0		91.4	79-130	11.70	30	
1,3-Dichlorobenzene	8.67	0.20	ug/L	10.0		86.7	80-120	12.90	30	
1,4-Dichlorobenzene	8.88	0.20	ug/L	10.0		88.8	80-120	10.60	30	
n-Butylbenzene	8.87	0.20	ug/L	10.0		88.7	74-129	13.00	30	
1,2-Dichlorobenzene	8.90	0.20	ug/L	10.0		89.0	80-120	12.10	30	
1,2-Dibromo-3-chloropropane	8.38	0.50	ug/L	10.0		83.8	62-123	16.80	30	
1,2,4-Trichlorobenzene	8.73	0.50	ug/L	10.0		87.3	64-124	15.30	30	
Hexachloro-1,3-Butadiene	8.67	2.00	ug/L	10.0		86.7	58-123	12.90	30	
Naphthalene	9.08	0.50	ug/L	10.0		90.8	50-134	14.00	30	
1,2,3-Trichlorobenzene	8.68	0.50	ug/L	10.0		86.8	49-133	13.50	30	
Surrogate: 1,2-Dichloroethane-d4	4.98		ug/L	*5.00*		*99.5*	*80-129*			
Surrogate: Toluene-d8	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.98		ug/L	*5.00*		*99.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.79		ug/L	*5.00*		*95.8*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0321-BLK1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 11:39						
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0321-BLK1)			Prepared: 12-May-2022 Analyzed: 12-May-2022 11:39							
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	2.00	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0321-BLK1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 11:39						
Surrogate: 1,2-Dichloroethane-d4	5.05		ug/L	*5.00*		*101*	*80-129*			
Surrogate: Toluene-d8	5.11		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.19		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.89		ug/L	*5.00*		*97.9*	*80-120*			
LCS (BKE0321-BS1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:08						
Chloromethane	10.3	0.50	ug/L	10.0		103	60-138			
Vinyl Chloride	9.64	0.20	ug/L	10.0		96.4	66-133			
Bromomethane	9.45	1.00	ug/L	10.0		94.5	72-131			
Chloroethane	10.0	0.20	ug/L	10.0		100	60-155			
Trichlorofluoromethane	10.6	0.20	ug/L	10.0		106	62-141			
Acrolein	37.9	5.00	ug/L	50.0		75.7	52-190			Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.84	0.20	ug/L	10.0		98.4	76-129			
Acetone	52.0	5.00	ug/L	50.0		104	58-142			
1,1-Dichloroethene	9.85	0.20	ug/L	10.0		98.5	69-135			
Iodomethane	9.38	1.00	ug/L	10.0		93.8	56-147			
Methylene Chloride	9.06	1.00	ug/L	10.0		90.6	65-135			
Acrylonitrile	9.29	1.00	ug/L	10.0		92.9	64-134			
Carbon Disulfide	9.20	0.20	ug/L	10.0		92.0	78-125			
trans-1,2-Dichloroethene	9.48	0.20	ug/L	10.0		94.8	78-128			
Vinyl Acetate	10.1	0.20	ug/L	10.0		101	55-138			
1,1-Dichloroethane	9.59	0.20	ug/L	10.0		95.9	76-124			
2-Butanone	50.1	5.00	ug/L	50.0		100	61-140			
2,2-Dichloropropane	10.5	0.20	ug/L	10.0		105	66-147			
cis-1,2-Dichloroethene	9.64	0.20	ug/L	10.0		96.4	80-121			
Chloroform	9.76	0.20	ug/L	10.0		97.6	80-122			
Bromochloromethane	9.98	0.20	ug/L	10.0		99.8	80-121			
1,1,1-Trichloroethane	10.4	0.20	ug/L	10.0		104	79-123			
1,1-Dichloropropene	9.22	0.20	ug/L	10.0		92.2	80-127			
Carbon tetrachloride	9.88	0.20	ug/L	10.0		98.8	53-137			
1,2-Dichloroethane	9.50	0.20	ug/L	10.0		95.0	75-123			
Benzene	9.68	0.20	ug/L	10.0		96.8	80-120			
Trichloroethene	9.71	0.20	ug/L	10.0		97.1	80-120			
1,2-Dichloropropane	9.19	0.20	ug/L	10.0		91.9	80-120			
Bromodichloromethane	9.34	0.20	ug/L	10.0		93.4	80-121			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0321-BS1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:08						
Dibromomethane	8.72	0.20	ug/L	10.0		87.2	80-120			
4-Methyl-2-Pentanone	44.0	5.00	ug/L	50.0		88.0	67-133			
cis-1,3-Dichloropropene	9.34	0.20	ug/L	10.0		93.4	80-124			
Toluene	9.45	0.20	ug/L	10.0		94.5	80-120			
trans-1,3-Dichloropropene	9.33	0.20	ug/L	10.0		93.3	71-127			
2-Hexanone	44.2	5.00	ug/L	50.0		88.5	69-133			
1,1,2-Trichloroethane	8.91	0.20	ug/L	10.0		89.1	80-121			
1,3-Dichloropropane	8.93	0.20	ug/L	10.0		89.3	80-120			
Tetrachloroethene	9.68	0.20	ug/L	10.0		96.8	80-120			
Dibromochloromethane	9.09	0.20	ug/L	10.0		90.9	65-135			
1,2-Dibromoethane	8.78	0.20	ug/L	10.0		87.8	80-121			
Chlorobenzene	9.43	0.20	ug/L	10.0		94.3	80-120			
Ethylbenzene	9.39	0.20	ug/L	10.0		93.9	80-120			
1,1,1,2-Tetrachloroethane	9.33	0.20	ug/L	10.0		93.3	80-120			
m,p-Xylene	19.1	0.40	ug/L	20.0		95.7	80-121			
o-Xylene	9.26	0.20	ug/L	10.0		92.6	80-121			
Styrene	9.87	0.20	ug/L	10.0		98.7	80-124			
Bromoform	8.54	0.20	ug/L	10.0		85.4	51-134			
1,1,2,2-Tetrachloroethane	8.32	0.20	ug/L	10.0		83.2	77-123			
1,2,3-Trichloropropane	8.30	0.50	ug/L	10.0		83.0	76-125			
trans-1,4-Dichloro 2-Butene	9.07	1.00	ug/L	10.0		90.7	55-129			
n-Propylbenzene	9.57	0.20	ug/L	10.0		95.7	78-130			
Bromobenzene	9.08	0.20	ug/L	10.0		90.8	80-120			
Isopropyl Benzene	9.67	0.20	ug/L	10.0		96.7	80-128			
2-Chlorotoluene	9.30	0.20	ug/L	10.0		93.0	78-122			
4-Chlorotoluene	9.30	0.20	ug/L	10.0		93.0	80-121			
t-Butylbenzene	9.48	0.20	ug/L	10.0		94.8	78-125			
1,3,5-Trimethylbenzene	9.58	0.20	ug/L	10.0		95.8	80-129			
1,2,4-Trimethylbenzene	9.72	0.20	ug/L	10.0		97.2	80-127			
s-Butylbenzene	9.61	0.20	ug/L	10.0		96.1	78-129			
4-Isopropyl Toluene	9.74	0.20	ug/L	10.0		97.4	79-130			
1,3-Dichlorobenzene	9.35	0.20	ug/L	10.0		93.5	80-120			
1,4-Dichlorobenzene	9.32	0.20	ug/L	10.0		93.2	80-120			
n-Butylbenzene	9.63	0.20	ug/L	10.0		96.3	74-129			
1,2-Dichlorobenzene	9.24	0.20	ug/L	10.0		92.4	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKE0321-BS1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:08						
1,2-Dibromo-3-chloropropane	7.70	0.50	ug/L	10.0		77.0	62-123			Q
1,2,4-Trichlorobenzene	9.43	0.50	ug/L	10.0		94.3	64-124			
Hexachloro-1,3-Butadiene	9.61	2.00	ug/L	10.0		96.1	58-123			
Naphthalene	8.88	0.50	ug/L	10.0		88.8	50-134			
1,2,3-Trichlorobenzene	9.18	0.50	ug/L	10.0		91.8	49-133			
Surrogate: 1,2-Dichloroethane-d4	4.93		ug/L	*5.00*		*98.5*	*80-129*			
Surrogate: Toluene-d8	5.09		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.14		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.85		ug/L	*5.00*		*96.9*	*80-120*			
LCS Dup (BKE0321-BSD1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:31						
Chloromethane	9.87	0.50	ug/L	10.0		98.7	60-138	4.16	30	
Vinyl Chloride	9.23	0.20	ug/L	10.0		92.3	66-133	4.42	30	
Bromomethane	9.10	1.00	ug/L	10.0		91.0	72-131	3.75	30	
Chloroethane	9.38	0.20	ug/L	10.0		93.8	60-155	6.40	30	
Trichlorofluoromethane	9.99	0.20	ug/L	10.0		99.9	62-141	5.88	30	
Acrolein	38.6	5.00	ug/L	50.0		77.1	52-190	1.86	30	Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.95	0.20	ug/L	10.0		89.5	76-129	9.44	30	
Acetone	46.4	5.00	ug/L	50.0		92.9	58-142	11.30	30	
1,1-Dichloroethene	9.32	0.20	ug/L	10.0		93.2	69-135	5.57	30	
Iodomethane	9.19	1.00	ug/L	10.0		91.9	56-147	1.99	30	
Methylene Chloride	8.92	1.00	ug/L	10.0		89.2	65-135	1.55	30	
Acrylonitrile	9.46	1.00	ug/L	10.0		94.6	64-134	1.78	30	
Carbon Disulfide	8.82	0.20	ug/L	10.0		88.2	78-125	4.30	30	
trans-1,2-Dichloroethene	9.42	0.20	ug/L	10.0		94.2	78-128	0.56	30	
Vinyl Acetate	9.98	0.20	ug/L	10.0		99.8	55-138	0.97	30	
1,1-Dichloroethane	9.49	0.20	ug/L	10.0		94.9	76-124	1.11	30	
2-Butanone	48.6	5.00	ug/L	50.0		97.1	61-140	3.05	30	
2,2-Dichloropropane	9.80	0.20	ug/L	10.0		98.0	66-147	7.27	30	
cis-1,2-Dichloroethene	9.52	0.20	ug/L	10.0		95.2	80-121	1.19	30	
Chloroform	9.48	0.20	ug/L	10.0		94.8	80-122	2.87	30	
Bromochloromethane	9.43	0.20	ug/L	10.0		94.3	80-121	5.64	30	
1,1,1-Trichloroethane	9.60	0.20	ug/L	10.0		96.0	79-123	7.99	30	
1,1-Dichloropropene	8.79	0.20	ug/L	10.0		87.9	80-127	4.83	30	
Carbon tetrachloride	9.72	0.20	ug/L	10.0		97.2	53-137	1.63	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0321-BSD1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:31						
1,2-Dichloroethane	9.73	0.20	ug/L	10.0		97.3	75-123	2.44	30	
Benzene	9.58	0.20	ug/L	10.0		95.8	80-120	1.04	30	
Trichloroethene	9.45	0.20	ug/L	10.0		94.5	80-120	2.72	30	
1,2-Dichloropropane	9.11	0.20	ug/L	10.0		91.1	80-120	0.82	30	
Bromodichloromethane	9.33	0.20	ug/L	10.0		93.3	80-121	0.18	30	
Dibromomethane	8.93	0.20	ug/L	10.0		89.3	80-120	2.33	30	
4-Methyl-2-Pentanone	47.2	5.00	ug/L	50.0		94.5	67-133	7.05	30	
cis-1,3-Dichloropropene	9.41	0.20	ug/L	10.0		94.1	80-124	0.71	30	
Toluene	9.55	0.20	ug/L	10.0		95.5	80-120	1.04	30	
trans-1,3-Dichloropropene	9.46	0.20	ug/L	10.0		94.6	71-127	1.38	30	
2-Hexanone	45.7	5.00	ug/L	50.0		91.4	69-133	3.28	30	
1,1,2-Trichloroethane	9.34	0.20	ug/L	10.0		93.4	80-121	4.68	30	
1,3-Dichloropropane	8.78	0.20	ug/L	10.0		87.8	80-120	1.75	30	
Tetrachloroethene	8.98	0.20	ug/L	10.0		89.8	80-120	7.45	30	
Dibromochloromethane	9.00	0.20	ug/L	10.0		90.0	65-135	0.90	30	
1,2-Dibromoethane	9.12	0.20	ug/L	10.0		91.2	80-121	3.82	30	
Chlorobenzene	9.13	0.20	ug/L	10.0		91.3	80-120	3.25	30	
Ethylbenzene	8.84	0.20	ug/L	10.0		88.4	80-120	5.99	30	
1,1,1,2-Tetrachloroethane	8.89	0.20	ug/L	10.0		88.9	80-120	4.86	30	
m,p-Xylene	18.4	0.40	ug/L	20.0		92.0	80-121	3.99	30	
o-Xylene	8.96	0.20	ug/L	10.0		89.6	80-121	3.29	30	
Styrene	9.40	0.20	ug/L	10.0		94.0	80-124	4.88	30	
Bromoform	8.54	0.20	ug/L	10.0		85.4	51-134	0.02	30	
1,1,2,2-Tetrachloroethane	8.44	0.20	ug/L	10.0		84.4	77-123	1.42	30	
1,2,3-Trichloropropane	8.85	0.50	ug/L	10.0		88.5	76-125	6.50	30	
trans-1,4-Dichloro 2-Butene	8.59	1.00	ug/L	10.0		85.9	55-129	5.47	30	
n-Propylbenzene	8.89	0.20	ug/L	10.0		88.9	78-130	7.37	30	
Bromobenzene	8.69	0.20	ug/L	10.0		86.9	80-120	4.37	30	
Isopropyl Benzene	9.00	0.20	ug/L	10.0		90.0	80-128	7.15	30	
2-Chlorotoluene	8.72	0.20	ug/L	10.0		87.2	78-122	6.48	30	
4-Chlorotoluene	8.65	0.20	ug/L	10.0		86.5	80-121	7.32	30	
t-Butylbenzene	8.86	0.20	ug/L	10.0		88.6	78-125	6.71	30	
1,3,5-Trimethylbenzene	9.06	0.20	ug/L	10.0		90.6	80-129	5.59	30	
1,2,4-Trimethylbenzene	9.00	0.20	ug/L	10.0		90.0	80-127	7.73	30	
s-Butylbenzene	8.83	0.20	ug/L	10.0		88.3	78-129	8.45	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKE0321 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKE0321-BSD1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 10:31						
4-Isopropyl Toluene	8.94	0.20	ug/L	10.0		89.4	79-130	8.63	30	
1,3-Dichlorobenzene	8.75	0.20	ug/L	10.0		87.5	80-120	6.61	30	
1,4-Dichlorobenzene	8.70	0.20	ug/L	10.0		87.0	80-120	6.92	30	
n-Butylbenzene	8.80	0.20	ug/L	10.0		88.0	74-129	9.06	30	
1,2-Dichlorobenzene	8.71	0.20	ug/L	10.0		87.1	80-120	5.88	30	
1,2-Dibromo-3-chloropropane	8.18	0.50	ug/L	10.0		81.8	62-123	6.09	30	Q
1,2,4-Trichlorobenzene	8.86	0.50	ug/L	10.0		88.6	64-124	6.22	30	
Hexachloro-1,3-Butadiene	8.72	2.00	ug/L	10.0		87.2	58-123	9.74	30	
Naphthalene	8.72	0.50	ug/L	10.0		87.2	50-134	1.80	30	
1,2,3-Trichlorobenzene	8.75	0.50	ug/L	10.0		87.5	49-133	4.80	30	
Surrogate: 1,2-Dichloroethane-d4	4.98		ug/L	*5.00*		*99.6*	*80-129*			
Surrogate: Toluene-d8	5.29		ug/L	*5.00*		*106*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.72		ug/L	*5.00*		*94.5*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKE0307 - EPA 5030C (Purge and Trap)

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0307-BLK1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 07:13						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Surrogate: Propane	1340		ug/L	*1800*		*74.3*	*62-122*			
LCS (BKE0307-BS1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 06:38						
Methane	559	0.65	ug/L	656		85.2	80-120			
Ethane	1130	1.23	ug/L	1230		91.6	80-120			
Ethene	965	1.14	ug/L	1150		83.9	80-120			
Surrogate: Propane	1280		ug/L	*1800*		*70.9*	*62-122*			
LCS Dup (BKE0307-BSD1)				Prepared: 12-May-2022 Analyzed: 12-May-2022 06:55						
Methane	592	0.65	ug/L	656		90.3	80-120	5.79	30	
Ethane	1200	1.23	ug/L	1230		97.5	80-120	6.25	30	
Ethene	1030	1.14	ug/L	1150		89.3	80-120	6.28	30	
Surrogate: Propane	1370		ug/L	*1800*		*76.1*	*62-122*			
Duplicate (BKE0307-DUP1)	**Source: 22E0172-02**			Prepared: 12-May-2022 Analyzed: 12-May-2022 14:29						
Methane	3970	0.65	ug/L		3570			10.70	30	
Ethane	ND	1.23	ug/L		ND					U
Ethene	ND	1.14	ug/L		ND					U
Surrogate: Propane	1540		ug/L	*1800*	*862*	*85.3*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKE0333 - No Prep Wet Chem

Instrument: IC930 Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0333-BLK2)				Prepared: 12-May-2022 Analyzed: 31-May-2022 19:42							
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKE0333-BS2)				Prepared: 12-May-2022 Analyzed: 31-May-2022 20:02							
Sulfate	5.17	0.100	0.100	mg/L	5.00		103	90-110			
Duplicate (BKE0333-DUP3)				**Source: 22E0172-02RE2** Prepared: 12-May-2022 Analyzed: 31-May-2022 22:22							
Sulfate	1.31	0.100	0.100	mg/L		1.31			0.23	20	
Matrix Spike (BKE0333-MS3)				**Source: 22E0172-02RE2** Prepared: 12-May-2022 Analyzed: 31-May-2022 22:42							
Sulfate	3.62	0.100	0.100	mg/L	2.01	1.31	115	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKE0596 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKE0596-BLK1)	Prepared: 23-May-2022 Analyzed: 23-May-2022 19:21										
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKE0596-BS1)	Prepared: 23-May-2022 Analyzed: 23-May-2022 19:45										
Total Organic Carbon	19.68	0.50	0.50	mg/L	20.00		98.4	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	03-Jun-2022 19:07

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

06 December 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (025217)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0147	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

22K0147

Chain-of-Custody Record

LANDAU ASSOCIATES

☐ North Seattle (206) 631-8660 ☐ Spokane (509) 327-
☒ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐

Page ___ of ___ 11/22

Turnaround Time: (Standard) / Accelerated

Project Name DC GW Regional Project No. 025217.
Project Location/Event SWMU-20 / November 2022
Sampler's Name Samantha Lindstrom, Josh Burbach
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com
paul.m.marin@boeing.com, paul.d.yount@boeing.com

Special Handling Requirements:

Shipment Method:

Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (8260D) unpreserved *	MEE (RSKSOP-175 mod) *	TOC (SM5310C)	Sulfate (E300.0)	Observations/Comments
MW-15C-221107	11/7/22	1138	AQ	3	X				
MW-14C-221107	11/7/22	1116	AQ	3	X				
MW-16C-221107	11/7/22	1206	AQ	3	X				
MW-22A-221107	11/7/22	1224	AQ	7	X	X	X	X	
MW-10C-221107	11/7/22	1308	AQ	3	X				
MW-9A-221107	11/7/22	1346	AQ	7	X	X	X	X	
BDC-Dup1-221107	11/7/22	1358	AQ	7	X	X	X	X	
SSL MW-11A 1405-2									
MW-11A-221107	11/7/22	1405	AQ	3	X				
MW-20C-221107	11/7/22	1258	AQ	3	X				
MW-13C-221107	11/7/22	1433	Aq	3	X				
MW-13A-221107	11/7/22	1505	Aq	3	X				
trip blnk	—	—	Aq	4	X	X			

Testing Parameters

Observations/Comments

___ Allow water samples to settle, collect aliquot from clear portion ☐

___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

___ Dissolved metal samples were field filtered

Other
*7 day hold time
+VOAs pres. w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Josh Burbach	Printed Name Roman Miller	Printed Name	Printed Name
Company Landau Associates	Company ARI	Company	Company
Date 11/7/22 Time 1633	Date 11/7/22 Time 1633	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-15C-221107	22K0147-01	Water	07-Nov-2022 11:38	07-Nov-2022 16:33
MW-14C-221107	22K0147-02	Water	07-Nov-2022 11:16	07-Nov-2022 16:33
MW-16C-221107	22K0147-03	Water	07-Nov-2022 12:06	07-Nov-2022 16:33
MW-22A-221107	22K0147-04	Water	07-Nov-2022 12:24	07-Nov-2022 16:33
MW-10C-221107	22K0147-05	Water	07-Nov-2022 13:08	07-Nov-2022 16:33
MW-9A-221107	22K0147-06	Water	07-Nov-2022 13:46	07-Nov-2022 16:33
BDC-DUP1-221107	22K0147-07	Water	07-Nov-2022 13:58	07-Nov-2022 16:33
MW-11A-221107	22K0147-08	Water	07-Nov-2022 14:05	07-Nov-2022 16:33
MW-20C-221107	22K0147-09	Water	07-Nov-2022 12:58	07-Nov-2022 16:33
MW-13C-221107	22K0147-10	Water	07-Nov-2022 14:33	07-Nov-2022 16:33
MW-13A-221107	22K0147-11	Water	07-Nov-2022 15:05	07-Nov-2022 16:33
Trip Blank	22K0147-12	Water	07-Nov-2022 11:38	07-Nov-2022 16:33

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" flag.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The sample duplicate relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: DC bw Regional

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22k0147

Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 3.2°

Time 1633

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 9708

Cooler Accepted by: _____ Date: 11/7/22 Time: 1633

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	YES	(NO)
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: [illegible] Date: 11/7/22 Time: 8:19 Labels checked by: PDB

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

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

Additional Notes, Discrepancies, & Resolutions:

Bubbles in 22k0147-01 C lab to determine size

By: Date:

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 11/8/2022 9:15:39AM

WORK ORDER

22K0147

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager:** Kelly Bottem

Project: Boeing Regional GW Developmental Center **Project Number:** 025217

Preservation Confirmation

Container ID	Container Type	pH
22K0147-01 A	VOA Vial, Clear, 40 mL	
22K0147-01 B	VOA Vial, Clear, 40 mL	
22K0147-01 C	VOA Vial, Clear, 40 mL	
22K0147-02 A	VOA Vial, Clear, 40 mL	
22K0147-02 B	VOA Vial, Clear, 40 mL	
22K0147-02 C	VOA Vial, Clear, 40 mL	
22K0147-03 A	VOA Vial, Clear, 40 mL	
22K0147-03 B	VOA Vial, Clear, 40 mL	
22K0147-03 C	VOA Vial, Clear, 40 mL	
22K0147-04 A	VOA Vial, Clear, 40 mL	
22K0147-04 B	VOA Vial, Clear, 40 mL	
22K0147-04 C	VOA Vial, Clear, 40 mL	
22K0147-04 D	VOA Vial, Clear, 40 mL, HCL	
22K0147-04 E	VOA Vial, Clear, 40 mL, HCL	
22K0147-04 F	HDPE NM, 1000 mL	
22K0147-04 G	Glass NM, Amber, 250 mL, 9N H2SO4	L2 Pass
22K0147-05 A	VOA Vial, Clear, 40 mL	
22K0147-05 B	VOA Vial, Clear, 40 mL	
22K0147-05 C	VOA Vial, Clear, 40 mL	
22K0147-06 A	VOA Vial, Clear, 40 mL	
22K0147-06 B	VOA Vial, Clear, 40 mL	
22K0147-06 C	VOA Vial, Clear, 40 mL	
22K0147-06 D	VOA Vial, Clear, 40 mL, HCL	
22K0147-06 E	VOA Vial, Clear, 40 mL, HCL	
22K0147-06 F	HDPE NM, 1000 mL	
22K0147-06 G	Glass NM, Amber, 250 mL, 9N H2SO4	L2 Pass
22K0147-07 A	VOA Vial, Clear, 40 mL	
22K0147-07 B	VOA Vial, Clear, 40 mL	
22K0147-07 C	VOA Vial, Clear, 40 mL	
22K0147-07 D	VOA Vial, Clear, 40 mL, HCL	
22K0147-07 E	VOA Vial, Clear, 40 mL, HCL	
22K0147-07 F	HDPE NM, 1000 mL	
22K0147-07 G	Glass NM, Amber, 250 mL, 9N H2SO4	L2 Pass
22K0147-08 A	VOA Vial, Clear, 40 mL	

Reviewed By Date

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-15C-221107

22K0147-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 11:38

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 15:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-01 A

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	1.98	ug/L	
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.34	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-15C-221107

22K0147-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 11:38

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 15:14

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.6*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-15C-221107

22K0147-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 11:38

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 15:14

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.4*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-14C-221107

22K0147-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 11:16

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 15:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-02 B

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-14C-221107

22K0147-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 11:16
Analyzed: 11/08/2022 15:34

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.8*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-14C-221107

22K0147-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 11:16

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 15:34

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-16C-221107

22K0147-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 12:06

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 15:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-03 B

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.84	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	1.33	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-16C-221107

22K0147-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 12:06
Analyzed: 11/08/2022 15:55

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.7*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-16C-221107

22K0147-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 12:06

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 15:55

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*94.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-22A-221107

22K0147-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 12:24

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-04 B

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.36	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.47	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	0.25	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-22A-221107

22K0147-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 12:24
Analyzed: 11/08/2022 16:15

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	2.10	ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	1.03	ug/L	
o-Xylene	95-47-6	1	0.20	2.44	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	0.37	ug/L	
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	3.29	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	10.2	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-22A-221107

22K0147-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 12:24

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:15

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-22A-221107

22K0147-04 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/07/2022 12:24

Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 09:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-04 D

Preparation Batch: BKK0262 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	5330	ug/L	
Ethane	74-84-0	1	1.23	1.29	ug/L	
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*101*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-22A-221107

22K0147-04 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 12:24

Instrument: IC930 Analyst: KLD — Analyzed: 11/08/2022 20:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0147-04 F

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.494	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-22A-221107

22K0147-04 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/07/2022 12:24

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/28/2022 17:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0147-04 G

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	18.16	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-10C-221107

22K0147-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:08

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-05 C

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-10C-221107

22K0147-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:08

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:36

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.4*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-10C-221107

22K0147-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:08

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:36

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-9A-221107

22K0147-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:46

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-06 B

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.35	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-9A-221107

22K0147-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:46

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:57

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	0.33	ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	0.73	ug/L	
o-Xylene	95-47-6	1	0.20	0.79	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	0.78	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	1.81	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-9A-221107

22K0147-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:46

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 16:57

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-9A-221107

22K0147-06 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/07/2022 13:46

Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 10:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-06 E

Preparation Batch: BKK0262 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	2740	ug/L	
Ethane	74-84-0	1	1.23	1120	ug/L	
Ethene	74-85-1	1	1.14	107	ug/L	
Surrogate: Propane			*62-122 %*	*89.5*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-9A-221107

22K0147-06 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 13:46

Instrument: IC930 Analyst: KLD — Analyzed: 11/08/2022 21:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0147-06 F

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-9A-221107

22K0147-06 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/07/2022 13:46

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/28/2022 18:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0147-06 G

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	10.34	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

BDC-DUP1-221107

22K0147-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:58

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 17:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-07 A

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.33	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

BDC-DUP1-221107

22K0147-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 13:58
Analyzed: 11/08/2022 17:19

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	0.35	ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	0.76	ug/L	
o-Xylene	95-47-6	1	0.20	0.81	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	0.80	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	0.22	ug/L	
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	1.58	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

BDC-DUP1-221107

22K0147-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 13:58

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 17:19

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

BDC-DUP1-221107

22K0147-07 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/07/2022 13:58

Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 11:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-07 D

Preparation Batch: BKK0262 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	2520	ug/L	
Ethane	74-84-0	1	1.23	1040	ug/L	
Ethene	74-85-1	1	1.14	110	ug/L	
Surrogate: Propane			*62-122 %*	*85.0*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

BDC-DUP1-221107

22K0147-07 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/07/2022 13:58

Instrument: IC930 Analyst: KLD — Analyzed: 11/08/2022 21:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0147-07 F

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

BDC-DUP1-221107

22K0147-07 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/07/2022 13:58

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/28/2022 18:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0147-07 G

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	10.05	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-11A-221107

22K0147-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 14:05

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 17:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-08 A

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.21	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	1.54	ug/L	
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.40	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	9.91	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.22	ug/L	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-11A-221107

22K0147-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 14:05
Analyzed: 11/08/2022 17:39

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	0.28	ug/L	
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.7*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-11A-221107

22K0147-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 14:05

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 17:39

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-20C-221107

22K0147-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 12:58

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 17:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-09 A

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.30	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-20C-221107

22K0147-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 12:58
Analyzed: 11/08/2022 17:59

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.8*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-20C-221107

22K0147-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 12:58

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 17:59

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*93.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-13C-221107

22K0147-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 14:33

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 18:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-10 A

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.28	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.43	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-13C-221107

22K0147-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 14:33

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 18:20

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.6*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-13C-221107

22K0147-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 14:33

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 18:20

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*94.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-13A-221107

22K0147-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 15:05

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 18:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-11 A

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	1.09	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	1.74	ug/L	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-13A-221107

22K0147-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 15:05

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 18:41

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	3.40	ug/L	
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.8*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

MW-13A-221107

22K0147-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 15:05

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 18:41

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*102*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Trip Blank

22K0147-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/07/2022 11:38

Instrument: NT2 Analyst: PKC — Analyzed: 11/08/2022 14:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-12 B

Preparation Batch: BKK0237 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	5.78	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	5.61	ug/L	
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Trip Blank

22K0147-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 11:38
Analyzed: 11/08/2022 14:54

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.6*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Trip Blank

22K0147-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: PKC

Sampled: 11/07/2022 11:38
Analyzed: 11/08/2022 14:54

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*102*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Trip Blank

22K0147-12 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/07/2022 11:38

Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 09:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0147-12 D

Preparation Batch: BKK0262 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*104*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0237 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0237-BLK2)	Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 13:15									
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0237 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0237-BLK2)			Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 13:15							
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	2.00	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0237 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0237-BLK2)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 13:15						
Surrogate: 1,2-Dichloroethane-d4	4.82		ug/L	*5.00*		*96.4*	*80-129*			
Surrogate: Toluene-d8	4.76		ug/L	*5.00*		*95.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.83		ug/L	*5.00*		*96.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.3*	*80-120*			
LCS (BKK0237-BS2)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 11:37						
Chloromethane	8.20	0.50	ug/L	10.0		82.0	60-138			
Vinyl Chloride	9.31	0.20	ug/L	10.0		93.1	66-133			
Bromomethane	9.64	1.00	ug/L	10.0		96.4	72-131			
Chloroethane	9.25	0.20	ug/L	10.0		92.5	60-155			
Trichlorofluoromethane	9.26	0.20	ug/L	10.0		92.6	62-141			
Acrolein	47.9	5.00	ug/L	50.0		95.8	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.4	0.20	ug/L	10.0		104	76-129			
Acetone	44.7	5.00	ug/L	50.0		89.4	58-142			
1,1-Dichloroethene	9.76	0.20	ug/L	10.0		97.6	69-135			
Iodomethane	10.3	1.00	ug/L	10.0		103	56-147			
Methylene Chloride	9.66	1.00	ug/L	10.0		96.6	65-135			
Acrylonitrile	9.32	1.00	ug/L	10.0		93.2	64-134			
Carbon Disulfide	9.89	0.20	ug/L	10.0		98.9	78-125			
trans-1,2-Dichloroethene	9.47	0.20	ug/L	10.0		94.7	78-128			
Vinyl Acetate	8.92	0.20	ug/L	10.0		89.2	55-138			
1,1-Dichloroethane	9.39	0.20	ug/L	10.0		93.9	76-124			
2-Butanone	47.8	5.00	ug/L	50.0		95.6	61-140			
2,2-Dichloropropane	9.36	0.20	ug/L	10.0		93.6	66-147			
cis-1,2-Dichloroethene	9.52	0.20	ug/L	10.0		95.2	80-121			
Chloroform	9.66	0.20	ug/L	10.0		96.6	80-122			
Bromochloromethane	9.37	0.20	ug/L	10.0		93.7	80-121			
1,1,1-Trichloroethane	9.31	0.20	ug/L	10.0		93.1	79-123			
1,1-Dichloropropene	9.50	0.20	ug/L	10.0		95.0	80-127			
Carbon tetrachloride	8.46	0.20	ug/L	10.0		84.6	53-137			
1,2-Dichloroethane	9.21	0.20	ug/L	10.0		92.1	75-123			
Benzene	9.81	0.20	ug/L	10.0		98.1	80-120			
Trichloroethene	9.66	0.20	ug/L	10.0		96.6	80-120			
1,2-Dichloropropane	9.53	0.20	ug/L	10.0		95.3	80-120			
Bromodichloromethane	9.08	0.20	ug/L	10.0		90.8	80-121			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0237 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKK0237-BS2)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 11:37						
Dibromomethane	9.38	0.20	ug/L	10.0		93.8	80-120			
4-Methyl-2-Pentanone	50.5	5.00	ug/L	50.0		101	67-133			
cis-1,3-Dichloropropene	9.37	0.20	ug/L	10.0		93.7	80-124			
Toluene	9.82	0.20	ug/L	10.0		98.2	80-120			
trans-1,3-Dichloropropene	9.19	0.20	ug/L	10.0		91.9	71-127			
2-Hexanone	47.9	5.00	ug/L	50.0		95.8	69-133			
1,1,2-Trichloroethane	9.84	0.20	ug/L	10.0		98.4	80-121			
1,3-Dichloropropane	9.41	0.20	ug/L	10.0		94.1	80-120			
Tetrachloroethene	9.92	0.20	ug/L	10.0		99.2	80-120			
Dibromochloromethane	8.97	0.20	ug/L	10.0		89.7	65-135			
1,2-Dibromoethane	9.62	0.20	ug/L	10.0		96.2	80-121			
Chlorobenzene	9.86	0.20	ug/L	10.0		98.6	80-120			
Ethylbenzene	9.89	0.20	ug/L	10.0		98.9	80-120			
1,1,1,2-Tetrachloroethane	9.04	0.20	ug/L	10.0		90.4	80-120			
m,p-Xylene	20.0	0.40	ug/L	20.0		100	80-121			
o-Xylene	9.83	0.20	ug/L	10.0		98.3	80-121			
Styrene	10.4	0.20	ug/L	10.0		104	80-124			
Bromoform	8.36	0.20	ug/L	10.0		83.6	51-134			
1,1,2,2-Tetrachloroethane	9.61	0.20	ug/L	10.0		96.1	77-123			
1,2,3-Trichloropropane	9.49	0.50	ug/L	10.0		94.9	76-125			
trans-1,4-Dichloro 2-Butene	9.09	1.00	ug/L	10.0		90.9	55-129			
n-Propylbenzene	10.6	0.20	ug/L	10.0		106	78-130			
Bromobenzene	10.0	0.20	ug/L	10.0		100	80-120			
Isopropyl Benzene	10.5	0.20	ug/L	10.0		105	80-128			
2-Chlorotoluene	10.2	0.20	ug/L	10.0		102	78-122			
4-Chlorotoluene	10.2	0.20	ug/L	10.0		102	80-121			
t-Butylbenzene	10.2	0.20	ug/L	10.0		102	78-125			
1,3,5-Trimethylbenzene	10.5	0.20	ug/L	10.0		105	80-129			
1,2,4-Trimethylbenzene	10.5	0.20	ug/L	10.0		105	80-127			
s-Butylbenzene	10.3	0.20	ug/L	10.0		103	78-129			
4-Isopropyl Toluene	10.5	0.20	ug/L	10.0		105	79-130			
1,3-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120			
1,4-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
n-Butylbenzene	10.5	0.20	ug/L	10.0		105	74-129			
1,2-Dichlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0237 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKK0237-BS2)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 11:37						
1,2-Dibromo-3-chloropropane	7.94	0.50	ug/L	10.0		79.4	62-123			Q
1,2,4-Trichlorobenzene	10.2	0.50	ug/L	10.0		102	64-124			
Hexachloro-1,3-Butadiene	9.92	2.00	ug/L	10.0		99.2	58-123			
Naphthalene	9.92	0.50	ug/L	10.0		99.2	50-134			
1,2,3-Trichlorobenzene	9.93	0.50	ug/L	10.0		99.3	49-133			
Surrogate: 1,2-Dichloroethane-d4	4.80		ug/L	*5.00*		*96.0*	*80-129*			
Surrogate: Toluene-d8	4.91		ug/L	*5.00*		*98.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.94		ug/L	*5.00*		*98.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94		ug/L	*5.00*		*98.7*	*80-120*			
LCS Dup (BKK0237-BSD2)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 12:18						
Chloromethane	9.06	0.50	ug/L	10.0		90.6	60-138	9.91	30	
Vinyl Chloride	10.0	0.20	ug/L	10.0		100	66-133	7.33	30	
Bromomethane	10.4	1.00	ug/L	10.0		104	72-131	7.45	30	
Chloroethane	10.1	0.20	ug/L	10.0		101	60-155	8.54	30	
Trichlorofluoromethane	10.8	0.20	ug/L	10.0		108	62-141	15.50	30	
Acrolein	54.5	5.00	ug/L	50.0		109	52-190	13.00	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.0	0.20	ug/L	10.0		110	76-129	5.38	30	
Acetone	50.9	5.00	ug/L	50.0		102	58-142	12.90	30	
1,1-Dichloroethene	10.5	0.20	ug/L	10.0		105	69-135	7.51	30	
Iodomethane	11.5	1.00	ug/L	10.0		115	56-147	11.00	30	
Methylene Chloride	10.8	1.00	ug/L	10.0		108	65-135	11.10	30	
Acrylonitrile	10.8	1.00	ug/L	10.0		108	64-134	14.70	30	
Carbon Disulfide	10.7	0.20	ug/L	10.0		107	78-125	7.75	30	
trans-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	78-128	5.89	30	
Vinyl Acetate	10.1	0.20	ug/L	10.0		101	55-138	12.40	30	
1,1-Dichloroethane	10.4	0.20	ug/L	10.0		104	76-124	9.75	30	
2-Butanone	53.7	5.00	ug/L	50.0		107	61-140	11.50	30	
2,2-Dichloropropane	10.1	0.20	ug/L	10.0		101	66-147	7.96	30	
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	80-121	11.60	30	
Chloroform	10.7	0.20	ug/L	10.0		107	80-122	9.98	30	
Bromochloromethane	10.5	0.20	ug/L	10.0		105	80-121	11.20	30	
1,1,1-Trichloroethane	10.3	0.20	ug/L	10.0		103	79-123	10.30	30	
1,1-Dichloropropene	10.5	0.20	ug/L	10.0		105	80-127	9.81	30	
Carbon tetrachloride	9.25	0.20	ug/L	10.0		92.5	53-137	8.92	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0237 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0237-BSD2)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 12:18						
1,2-Dichloroethane	10.4	0.20	ug/L	10.0		104	75-123	11.70	30	
Benzene	10.8	0.20	ug/L	10.0		108	80-120	9.33	30	
Trichloroethene	10.7	0.20	ug/L	10.0		107	80-120	10.10	30	
1,2-Dichloropropane	10.6	0.20	ug/L	10.0		106	80-120	10.70	30	
Bromodichloromethane	9.96	0.20	ug/L	10.0		99.6	80-121	9.29	30	
Dibromomethane	10.4	0.20	ug/L	10.0		104	80-120	10.10	30	
4-Methyl-2-Pentanone	56.5	5.00	ug/L	50.0		113	67-133	11.30	30	
cis-1,3-Dichloropropene	10.4	0.20	ug/L	10.0		104	80-124	10.90	30	
Toluene	10.8	0.20	ug/L	10.0		108	80-120	9.34	30	
trans-1,3-Dichloropropene	10.2	0.20	ug/L	10.0		102	71-127	10.60	30	
2-Hexanone	55.1	5.00	ug/L	50.0		110	69-133	13.90	30	
1,1,2-Trichloroethane	10.6	0.20	ug/L	10.0		106	80-121	7.31	30	
1,3-Dichloropropane	10.7	0.20	ug/L	10.0		107	80-120	12.90	30	
Tetrachloroethene	11.1	0.20	ug/L	10.0		111	80-120	11.10	30	
Dibromochloromethane	10.2	0.20	ug/L	10.0		102	65-135	12.40	30	
1,2-Dibromoethane	10.7	0.20	ug/L	10.0		107	80-121	10.70	30	
Chlorobenzene	10.9	0.20	ug/L	10.0		109	80-120	9.61	30	
Ethylbenzene	10.9	0.20	ug/L	10.0		109	80-120	9.81	30	
1,1,1,2-Tetrachloroethane	10.2	0.20	ug/L	10.0		102	80-120	12.50	30	
m,p-Xylene	22.0	0.40	ug/L	20.0		110	80-121	9.46	30	
o-Xylene	10.9	0.20	ug/L	10.0		109	80-121	10.50	30	
Styrene	11.4	0.20	ug/L	10.0		114	80-124	8.79	30	
Bromoform	9.68	0.20	ug/L	10.0		96.8	51-134	14.70	30	
1,1,2,2-Tetrachloroethane	10.9	0.20	ug/L	10.0		109	77-123	12.60	30	
1,2,3-Trichloropropane	11.1	0.50	ug/L	10.0		111	76-125	15.60	30	
trans-1,4-Dichloro 2-Butene	10.4	1.00	ug/L	10.0		104	55-129	13.10	30	
n-Propylbenzene	11.5	0.20	ug/L	10.0		115	78-130	8.65	30	
Bromobenzene	11.0	0.20	ug/L	10.0		110	80-120	8.90	30	
Isopropyl Benzene	11.5	0.20	ug/L	10.0		115	80-128	9.36	30	
2-Chlorotoluene	11.3	0.20	ug/L	10.0		113	78-122	9.96	30	
4-Chlorotoluene	11.3	0.20	ug/L	10.0		113	80-121	10.70	30	
t-Butylbenzene	11.2	0.20	ug/L	10.0		112	78-125	8.94	30	
1,3,5-Trimethylbenzene	11.5	0.20	ug/L	10.0		115	80-129	9.42	30	
1,2,4-Trimethylbenzene	11.6	0.20	ug/L	10.0		116	80-127	9.69	30	
s-Butylbenzene	11.2	0.20	ug/L	10.0		112	78-129	8.06	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0237 - EPA 8260D

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0237-BSD2)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 12:18						
4-Isopropyl Toluene	11.5	0.20	ug/L	10.0		115	79-130	8.95	30	
1,3-Dichlorobenzene	11.1	0.20	ug/L	10.0		111	80-120	8.17	30	
1,4-Dichlorobenzene	11.0	0.20	ug/L	10.0		110	80-120	8.79	30	
n-Butylbenzene	11.3	0.20	ug/L	10.0		113	74-129	7.42	30	
1,2-Dichlorobenzene	11.0	0.20	ug/L	10.0		110	80-120	9.21	30	
1,2-Dibromo-3-chloropropane	9.63	0.50	ug/L	10.0		96.3	62-123	19.20	30	Q
1,2,4-Trichlorobenzene	11.2	0.50	ug/L	10.0		112	64-124	8.55	30	
Hexachloro-1,3-Butadiene	10.4	2.00	ug/L	10.0		104	58-123	4.65	30	
Naphthalene	11.3	0.50	ug/L	10.0		113	50-134	12.80	30	
1,2,3-Trichlorobenzene	11.0	0.50	ug/L	10.0		110	49-133	9.94	30	
Surrogate: 1,2-Dichloroethane-d4	5.02		ug/L	*5.00*		*100*	*80-129*			
Surrogate: Toluene-d8	4.87		ug/L	*5.00*		*97.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.89		ug/L	*5.00*		*97.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.98		ug/L	*5.00*		*99.5*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKK0262 - EPA RSK-175

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0262-BLK1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:53						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Surrogate: Propane	1120		ug/L	*1800*		*62.0*	*62-122*			
LCS (BKK0262-BS1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:17						
Methane	571	0.65	ug/L	656		87.0	80-120			
Ethane	1100	1.23	ug/L	1230		89.7	80-120			
Ethene	1060	1.14	ug/L	1150		92.0	80-120			
Surrogate: Propane	1480		ug/L	*1800*		*82.4*	*62-122*			
LCS Dup (BKK0262-BSD1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:35						
Methane	636	0.65	ug/L	656		96.9	80-120	10.80	30	
Ethane	1240	1.23	ug/L	1230		101	80-120	11.50	30	
Ethene	1180	1.14	ug/L	1150		103	80-120	11.20	30	
Surrogate: Propane	1720		ug/L	*1800*		*95.5*	*62-122*			
Duplicate (BKK0262-DUP1)	**Source: 22K0147-06**			Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 10:59						
Methane	2810	0.65	ug/L		2740			2.49	30	
Ethane	1180	1.23	ug/L		1120			5.23	30	
Ethene	139	1.14	ug/L		107			26.60	30	
Surrogate: Propane	1690		ug/L	*1800*	*1610*	*93.8*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0256 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0256-BLK1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:37							
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0256-BS1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:57							
Sulfate	5.29	0.100	0.100	mg/L	5.00		106	90-110			
Duplicate (BKK0256-DUP1)		**Source: 22K0147-04**		Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 20:37							
Sulfate	0.492	0.100	0.100	mg/L		0.494			0.41	20	
Matrix Spike (BKK0256-MS1)		**Source: 22K0147-04**		Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 20:57							
Sulfate	2.52	0.100	0.100	mg/L	2.01	0.494	100	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0757 - SM 5310 B-00

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0757-BLK1)				Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 16:39							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKK0757-BS1)				Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 17:05							
Total Organic Carbon	20.56	0.50	0.50	mg/L	20.00		103	90-110			
Duplicate (BKK0757-DUP1)		**Source: 22K0147-04**		Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 17:46							
Total Organic Carbon	17.84	0.50	0.50	mg/L		18.16			1.78	20	
Matrix Spike (BKK0757-MS1)		**Source: 22K0147-04**		Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 18:06							
Total Organic Carbon	36.15	0.50	0.50	mg/L	20.00	18.16	90.0	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: 025217	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 18:15

Notes and Definitions

*	Flagged value is not within established control limits.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

06 December 2022

Jennifer Parsons
The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center (Boeing Regional GW Developmental Center)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
22K0180	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

AR:22K0180

LANDAU ASSOCIATES

Chain-of-Custody Record

☐ North Seattle (206) 631-8660 ☐ Spokane (509) 327-9737
☒ Tacoma (253) 926-2493 ☐ Portland (503) 542-1080
☐ Olympia (360) 791-3178 ☐ _____

Date 11/8/22
Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name DC Regional GW Project No. 025217
Project Location/Event SWMU-20 / November 2022
Sampler's Name Samantha Lindstrom
Project Contact Chris Kimmel, Jen Parsons
Send Results To Chris Kimmel, Jen Parsons, data@landauinc.com

Special Handling Requirements:
Shipment Method: drop-off
Stored on ice: (Yes) / No

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (8260D) *	MEE (RSK SOP-175 Modified) *	TOC (SM 5310C)	Sulfate (E300.0)	Observations/Comments
MW-6A-221108	11/8/22	952	AQ	7	X	X	X	X	
MW-6B-221108	11/8/22	1038	AQ	7	X	X	X	X	
Tripblanks-221108	~~11/8/22~~ SSL	—	AQ	~~2~~ 4 SSL	X	X			

Testing Parameters

___ Allow water samples to settle, collect aliquot from clear portion ☐

___ NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

___ Dissolved metal samples were field filtered

Other * non-preserved (7-day)
+ preserved w/HCl

Relinquished by	Received by	Relinquished by	Received by
Signature [signature]	Signature [signature]	Signature	Signature
Printed Name Samantha Lindstrom	Printed Name Jacob Walter	Printed Name	Printed Name
Company Landau Associates	Company AR LLC	Company	Company
Date 11/8/22 Time 1435	Date 11/08/22 Time 1434	Date Time	Date Time

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

10/2018

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-6A-221108	22K0180-01	Water	08-Nov-2022 09:52	08-Nov-2022 13:34
MW-6B-221108	22K0180-02	Water	08-Nov-2022 10:38	08-Nov-2022 13:34
Tripblanks-221108	22K0180-03	Water	08-Nov-2022 00:00	08-Nov-2022 13:34

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of all associated "Q" flagged analytes which are out of control high in the CCAL and bromoform is out of control low. All associated samples that contain analyte have been flaggd with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Volatile Gases - MEE by RSK175

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analytical Resources, LLC
Analytical Chemists and Consultants

Printed: 11/8/2022 4:07:32PM

WORK ORDER

22K0180

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: The Boeing Company [Developmental Center] **Project Manager: Kelly Bottem**

Project: Boeing Regional GW Developmental Center **Project Number: Boeing Regional GW Developmental Center**

Preservation Confirmation

Container ID	Container Type	pH	
22K0180-01 A	HDPE NM, 1000 mL		
22K0180-01 B	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
22K0180-01 C	VOA Vial, Clear, 40 mL		
22K0180-01 D	VOA Vial, Clear, 40 mL		
22K0180-01 E	VOA Vial, Clear, 40 mL		
22K0180-01 F	VOA Vial, Clear, 40 mL, HCL		
22K0180-01 G	VOA Vial, Clear, 40 mL, HCL		
22K0180-02 A	HDPE NM, 1000 mL		
22K0180-02 B	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
22K0180-02 C	VOA Vial, Clear, 40 mL		
22K0180-02 D	VOA Vial, Clear, 40 mL		
22K0180-02 E	VOA Vial, Clear, 40 mL		
22K0180-02 F	VOA Vial, Clear, 40 mL, HCL		
22K0180-02 G	VOA Vial, Clear, 40 mL, HCL		
22K0180-03 A	VOA Vial, Clear, 40 mL		
22K0180-03 B	VOA Vial, Clear, 40 mL, HCL		

PLB
Preservation Confirmed By

11/8/22
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau Associates Project Name: DC Regional GW

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 22K0180 Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1434 2.1 _____ _____ _____ _____ _____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 70a9708

Cooler Accepted by: JG Date: 11/8/22 Time: 1434

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?			(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs (Baggies) (Foam Block) Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	PID 11/8 (NA)		11/7/22

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: PI B Date: 11/8/22 Time: 15:59 Labels checked by: _____

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

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

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6A-221108

22K0180-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 09:52

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 13:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0180-01 C

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.68	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	25.3	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.79	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6A-221108

22K0180-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 09:52

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 13:50

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*105*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6A-221108

22K0180-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 09:52

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 13:50

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*83.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.2*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6A-221108

22K0180-01 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2022 09:52

Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 12:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0180-01 F

Preparation Batch: BKK0262 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	416	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*87.0*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6A-221108

22K0180-01RE1 (Water)

Wet Chemistry

Method: EPA 300.0
Instrument: IC930 Analyst: KLD

Sampled: 11/08/2022 09:52
Analyzed: 11/10/2022 08:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BKK0256
Prepared: 11/08/2022
Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 22K0180-01RE1 A

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	10	1.00	1.00	35.8	mg/L	D

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6A-221108

22K0180-01RE1 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/08/2022 09:52

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/30/2022 18:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0180-01RE1 B

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	8.80	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6B-221108

22K0180-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 10:38

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 14:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0180-02 C

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.35	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	23.1	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.23	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6B-221108

22K0180-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 10:38

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 14:11

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	0.20	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	3.52	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*97.0*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6B-221108

22K0180-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 10:38

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 14:11

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*90.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*106*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6B-221108

22K0180-02 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2022 10:38

Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 12:29

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0180-02 F

Preparation Batch: BKK0262 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	2830	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*84.4*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6B-221108

22K0180-02 (Water)

Wet Chemistry

Method: EPA 300.0 — Sampled: 11/08/2022 10:38

Instrument: IC930 Analyst: KLD — Analyzed: 11/09/2022 02:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0180-02 A

Preparation Batch: BKK0256 — Sample Size: 10 mL

Prepared: 11/08/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.397	mg/L	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

MW-6B-221108

22K0180-02RE1 (Water)

Wet Chemistry

Method: SM 5310 B-00 — Sampled: 11/08/2022 10:38

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 11/30/2022 18:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 22K0180-02RE1 B

Preparation Batch: BKK0757 — Sample Size: 20 mL

Prepared: 11/28/2022 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	15.94	mg/L	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Tripblanks-221108

22K0180-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 00:00

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 12:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0180-03 A

Preparation Batch: BKK0260 — Sample Size: 10 mL

Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Tripblanks-221108

22K0180-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 00:00

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 12:07

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.00	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*98.9*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*104*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Tripblanks-221108

22K0180-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/08/2022 00:00

Instrument: NT2 Analyst: LH — Analyzed: 11/09/2022 12:07

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*87.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Tripblanks-221108

22K0180-03 (Water)

Dissolved Gases

Method: EPA RSK-175 — Sampled: 11/08/2022 00:00
Instrument: FID6 Analyst: LH — Analyzed: 11/09/2022 13:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22K0180-03 B
Preparation Batch: BKK0262 — Sample Size: 10 mL
Prepared: 11/09/2022 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	ND	ug/L	U
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Surrogate: Propane			*62-122 %*	*93.6*	*%*	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK2)			Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK2)			Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39							
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	2.00	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0260-BLK2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 08:39						
Surrogate: 1,2-Dichloroethane-d4	5.17		ug/L	*5.00*		*103*	*80-129*			
Surrogate: Toluene-d8	4.81		ug/L	*5.00*		*96.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.73		ug/L	*5.00*		*94.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01		ug/L	*5.00*		*100*	*80-120*			
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
Chloromethane	8.87	0.50	ug/L	10.0		88.7	60-138			
Vinyl Chloride	10.3	0.20	ug/L	10.0		103	66-133			
Bromomethane	10.5	1.00	ug/L	10.0		105	72-131			
Chloroethane	10.6	0.20	ug/L	10.0		106	60-155			
Trichlorofluoromethane	10.3	0.20	ug/L	10.0		103	62-141			
Acrolein	53.1	5.00	ug/L	50.0		106	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.1	0.20	ug/L	10.0		111	76-129			
Acetone	52.3	5.00	ug/L	50.0		105	58-142			
1,1-Dichloroethene	10.7	0.20	ug/L	10.0		107	69-135			
Iodomethane	11.3	1.00	ug/L	10.0		113	56-147			
Methylene Chloride	10.6	1.00	ug/L	10.0		106	65-135			
Acrylonitrile	11.0	1.00	ug/L	10.0		110	64-134			
Carbon Disulfide	10.7	0.20	ug/L	10.0		107	78-125			
trans-1,2-Dichloroethene	10.5	0.20	ug/L	10.0		105	78-128			
Vinyl Acetate	10.2	0.20	ug/L	10.0		102	55-138			
1,1-Dichloroethane	10.5	0.20	ug/L	10.0		105	76-124			
2-Butanone	55.0	5.00	ug/L	50.0		110	61-140			
2,2-Dichloropropane	10.1	0.20	ug/L	10.0		101	66-147			
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	80-121			
Chloroform	10.7	0.20	ug/L	10.0		107	80-122			
Bromochloromethane	10.5	0.20	ug/L	10.0		105	80-121			
1,1,1-Trichloroethane	10.1	0.20	ug/L	10.0		101	79-123			
1,1-Dichloropropene	10.6	0.20	ug/L	10.0		106	80-127			
Carbon tetrachloride	8.11	0.20	ug/L	10.0		81.1	53-137			
1,2-Dichloroethane	10.7	0.20	ug/L	10.0		107	75-123			
Benzene	11.0	0.20	ug/L	10.0		110	80-120			
Trichloroethene	10.7	0.20	ug/L	10.0		107	80-120			
1,2-Dichloropropane	10.8	0.20	ug/L	10.0		108	80-120			
Bromodichloromethane	9.77	0.20	ug/L	10.0		97.7	80-121			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
Dibromomethane	10.6	0.20	ug/L	10.0		106	80-120			
4-Methyl-2-Pentanone	58.1	5.00	ug/L	50.0		116	67-133			
cis-1,3-Dichloropropene	10.5	0.20	ug/L	10.0		105	80-124			
Toluene	10.9	0.20	ug/L	10.0		109	80-120			
trans-1,3-Dichloropropene	10.3	0.20	ug/L	10.0		103	71-127			
2-Hexanone	56.1	5.00	ug/L	50.0		112	69-133			
1,1,2-Trichloroethane	10.8	0.20	ug/L	10.0		108	80-121			
1,3-Dichloropropane	10.8	0.20	ug/L	10.0		108	80-120			
Tetrachloroethene	11.2	0.20	ug/L	10.0		112	80-120			
Dibromochloromethane	8.88	0.20	ug/L	10.0		88.8	65-135			
1,2-Dibromoethane	10.9	0.20	ug/L	10.0		109	80-121			
Chlorobenzene	11.0	0.20	ug/L	10.0		110	80-120			
Ethylbenzene	10.9	0.20	ug/L	10.0		109	80-120			
1,1,1,2-Tetrachloroethane	9.52	0.20	ug/L	10.0		95.2	80-120			
m,p-Xylene	22.4	0.40	ug/L	20.0		112	80-121			
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121			
Styrene	11.5	0.20	ug/L	10.0		115	80-124			
Bromoform	7.97	0.20	ug/L	10.0		79.7	51-134			Q
1,1,2,2-Tetrachloroethane	11.1	0.20	ug/L	10.0		111	77-123			
1,2,3-Trichloropropane	11.2	0.50	ug/L	10.0		112	76-125			
trans-1,4-Dichloro 2-Butene	10.8	1.00	ug/L	10.0		108	55-129			
n-Propylbenzene	12.1	0.20	ug/L	10.0		121	78-130			Q
Bromobenzene	11.4	0.20	ug/L	10.0		114	80-120			
Isopropyl Benzene	11.9	0.20	ug/L	10.0		119	80-128			
2-Chlorotoluene	11.5	0.20	ug/L	10.0		115	78-122			
4-Chlorotoluene	11.6	0.20	ug/L	10.0		116	80-121			
t-Butylbenzene	11.6	0.20	ug/L	10.0		116	78-125			
1,3,5-Trimethylbenzene	11.9	0.20	ug/L	10.0		119	80-129			
1,2,4-Trimethylbenzene	11.8	0.20	ug/L	10.0		118	80-127			
s-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-129			
4-Isopropyl Toluene	11.8	0.20	ug/L	10.0		118	79-130			
1,3-Dichlorobenzene	11.5	0.20	ug/L	10.0		115	80-120			
1,4-Dichlorobenzene	11.3	0.20	ug/L	10.0		113	80-120			
n-Butylbenzene	11.7	0.20	ug/L	10.0		117	74-129			
1,2-Dichlorobenzene	11.3	0.20	ug/L	10.0		113	80-120			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKK0260-BS2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:16						
1,2-Dibromo-3-chloropropane	9.38	0.50	ug/L	10.0		93.8	62-123			
1,2,4-Trichlorobenzene	11.5	0.50	ug/L	10.0		115	64-124			
Hexachloro-1,3-Butadiene	10.8	2.00	ug/L	10.0		108	58-123			
Naphthalene	11.5	0.50	ug/L	10.0		115	50-134			
1,2,3-Trichlorobenzene	11.4	0.50	ug/L	10.0		114	49-133			
Surrogate: 1,2-Dichloroethane-d4	5.00		ug/L	*5.00*		*100*	*80-129*			
Surrogate: Toluene-d8	4.92		ug/L	*5.00*		*98.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.79		ug/L	*5.00*		*95.7*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*80-120*			
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
Chloromethane	9.19	0.50	ug/L	10.0		91.9	60-138	3.58	30	
Vinyl Chloride	10.4	0.20	ug/L	10.0		104	66-133	1.12	30	
Bromomethane	10.7	1.00	ug/L	10.0		107	72-131	1.90	30	
Chloroethane	10.4	0.20	ug/L	10.0		104	60-155	1.62	30	
Trichlorofluoromethane	9.96	0.20	ug/L	10.0		99.6	62-141	3.23	30	
Acrolein	55.7	5.00	ug/L	50.0		111	52-190	4.68	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.5	0.20	ug/L	10.0		115	76-129	3.11	30	
Acetone	55.4	5.00	ug/L	50.0		111	58-142	5.85	30	
1,1-Dichloroethene	11.2	0.20	ug/L	10.0		112	69-135	5.20	30	
Iodomethane	11.7	1.00	ug/L	10.0		117	56-147	3.69	30	
Methylene Chloride	11.0	1.00	ug/L	10.0		110	65-135	3.56	30	
Acrylonitrile	11.6	1.00	ug/L	10.0		116	64-134	5.45	30	
Carbon Disulfide	11.4	0.20	ug/L	10.0		114	78-125	6.09	30	
trans-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	78-128	4.00	30	
Vinyl Acetate	10.4	0.20	ug/L	10.0		104	55-138	2.21	30	
1,1-Dichloroethane	10.9	0.20	ug/L	10.0		109	76-124	4.14	30	
2-Butanone	58.9	5.00	ug/L	50.0		118	61-140	6.73	30	
2,2-Dichloropropane	10.2	0.20	ug/L	10.0		102	66-147	0.84	30	
cis-1,2-Dichloroethene	11.0	0.20	ug/L	10.0		110	80-121	3.00	30	
Chloroform	11.0	0.20	ug/L	10.0		110	80-122	2.86	30	
Bromochloromethane	10.9	0.20	ug/L	10.0		109	80-121	3.55	30	
1,1,1-Trichloroethane	10.3	0.20	ug/L	10.0		103	79-123	2.31	30	
1,1-Dichloropropene	10.9	0.20	ug/L	10.0		109	80-127	2.49	30	
Carbon tetrachloride	8.48	0.20	ug/L	10.0		84.8	53-137	4.48	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
1,2-Dichloroethane	10.8	0.20	ug/L	10.0		108	75-123	1.70	30	
Benzene	11.3	0.20	ug/L	10.0		113	80-120	2.79	30	
Trichloroethene	11.1	0.20	ug/L	10.0		111	80-120	3.92	30	
1,2-Dichloropropane	11.1	0.20	ug/L	10.0		111	80-120	2.45	30	
Bromodichloromethane	10.1	0.20	ug/L	10.0		101	80-121	3.67	30	
Dibromomethane	11.0	0.20	ug/L	10.0		110	80-120	4.04	30	
4-Methyl-2-Pentanone	60.0	5.00	ug/L	50.0		120	67-133	3.37	30	
cis-1,3-Dichloropropene	10.8	0.20	ug/L	10.0		108	80-124	3.20	30	
Toluene	11.2	0.20	ug/L	10.0		112	80-120	2.18	30	
trans-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	71-127	4.48	30	
2-Hexanone	58.5	5.00	ug/L	50.0		117	69-133	4.17	30	
1,1,2-Trichloroethane	11.2	0.20	ug/L	10.0		112	80-121	3.93	30	
1,3-Dichloropropane	11.1	0.20	ug/L	10.0		111	80-120	2.89	30	
Tetrachloroethene	11.3	0.20	ug/L	10.0		113	80-120	0.80	30	
Dibromochloromethane	9.36	0.20	ug/L	10.0		93.6	65-135	5.18	30	
1,2-Dibromoethane	11.3	0.20	ug/L	10.0		113	80-121	4.13	30	
Chlorobenzene	11.3	0.20	ug/L	10.0		113	80-120	3.04	30	
Ethylbenzene	11.3	0.20	ug/L	10.0		113	80-120	3.70	30	
1,1,1,2-Tetrachloroethane	9.92	0.20	ug/L	10.0		99.2	80-120	4.12	30	
m,p-Xylene	23.0	0.40	ug/L	20.0		115	80-121	2.49	30	
o-Xylene	11.2	0.20	ug/L	10.0		112	80-121	1.59	30	
Styrene	11.9	0.20	ug/L	10.0		119	80-124	3.42	30	
Bromoform	8.46	0.20	ug/L	10.0		84.6	51-134	5.97	30	Q
1,1,2,2-Tetrachloroethane	11.3	0.20	ug/L	10.0		113	77-123	1.45	30	
1,2,3-Trichloropropane	11.3	0.50	ug/L	10.0		113	76-125	0.37	30	
trans-1,4-Dichloro 2-Butene	10.6	1.00	ug/L	10.0		106	55-129	1.79	30	
n-Propylbenzene	12.1	0.20	ug/L	10.0		121	78-130	0.09	30	Q
Bromobenzene	11.5	0.20	ug/L	10.0		115	80-120	1.14	30	
Isopropyl Benzene	12.1	0.20	ug/L	10.0		121	80-128	1.27	30	
2-Chlorotoluene	11.7	0.20	ug/L	10.0		117	78-122	1.88	30	
4-Chlorotoluene	11.3	0.20	ug/L	10.0		113	80-121	3.01	30	
t-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-125	1.00	30	
1,3,5-Trimethylbenzene	12.0	0.20	ug/L	10.0		120	80-129	0.59	30	
1,2,4-Trimethylbenzene	11.9	0.20	ug/L	10.0		119	80-127	0.80	30	
s-Butylbenzene	11.7	0.20	ug/L	10.0		117	78-129	0.51	30	

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKK0260 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKK0260-BSD2)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:58						
4-Isopropyl Toluene	12.0	0.20	ug/L	10.0		120	79-130	1.68	30	
1,3-Dichlorobenzene	11.6	0.20	ug/L	10.0		116	80-120	1.31	30	
1,4-Dichlorobenzene	11.5	0.20	ug/L	10.0		115	80-120	1.40	30	
n-Butylbenzene	11.7	0.20	ug/L	10.0		117	74-129	0.05	30	
1,2-Dichlorobenzene	11.6	0.20	ug/L	10.0		116	80-120	2.77	30	
1,2-Dibromo-3-chloropropane	9.82	0.50	ug/L	10.0		98.2	62-123	4.64	30	
1,2,4-Trichlorobenzene	11.5	0.50	ug/L	10.0		115	64-124	0.69	30	
Hexachloro-1,3-Butadiene	11.0	2.00	ug/L	10.0		110	58-123	2.18	30	
Naphthalene	11.9	0.50	ug/L	10.0		119	50-134	3.51	30	
1,2,3-Trichlorobenzene	11.5	0.50	ug/L	10.0		115	49-133	1.22	30	
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.89		ug/L	*5.00*		*97.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.85		ug/L	*5.00*		*96.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96		ug/L	*5.00*		*99.1*	*80-120*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Dissolved Gases - Quality Control

Batch BKK0262 - EPA RSK-175

Instrument: FID6 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0262-BLK1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:53						
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Surrogate: Propane	1120		ug/L	*1800*		*62.0*	*62-122*			
LCS (BKK0262-BS1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:17						
Methane	571	0.65	ug/L	656		87.0	80-120			
Ethane	1100	1.23	ug/L	1230		89.7	80-120			
Ethene	1060	1.14	ug/L	1150		92.0	80-120			
Surrogate: Propane	1480		ug/L	*1800*		*82.4*	*62-122*			
LCS Dup (BKK0262-BSD1)				Prepared: 09-Nov-2022 Analyzed: 09-Nov-2022 07:35						
Methane	636	0.65	ug/L	656		96.9	80-120	10.80	30	
Ethane	1240	1.23	ug/L	1230		101	80-120	11.50	30	
Ethene	1180	1.14	ug/L	1150		103	80-120	11.20	30	
Surrogate: Propane	1720		ug/L	*1800*		*95.5*	*62-122*			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0256 - EPA 300.0

Instrument: IC930 Analyst: KLD

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0256-BLK1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:37							
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BKK0256-BS1)				Prepared: 08-Nov-2022 Analyzed: 08-Nov-2022 19:57							
Sulfate	5.29	0.100	0.100	mg/L	5.00		106	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BKK0757 - SM 5310 B-00

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKK0757-BLK1)				Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 16:39							
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BKK0757-BS1)				Prepared: 28-Nov-2022 Analyzed: 28-Nov-2022 17:05							
Total Organic Carbon	20.56	0.50	0.50	mg/L	20.00		103	90-110			

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023

The Boeing Company [Developmental Center]	Project: Boeing Regional GW Developmental Center	
PO Box 3703 MS 2R-96	Project Number: Boeing Regional GW Developmental Center	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	06-Dec-2022 19:02

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

APPENDIX B

Cumulative Groundwater Level Measurements

Table B-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			November 2022		May 2022		November 2021		May 2021		November 2020		May 2020		November 2019		May 2019		February 2019		November 2018		August 2018		May 2018		February 2018		November 2017		August 2017	
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)*	*Depth to Water (ft)*	*Water Elevation (ft)*
9-101-bldg.	MW-6A	24.25	12.74	2.06	12.51	2.29	12.44	2.36	12.76	2.04	13.01	1.79	12.73	2.07	13.14	1.66	12.81	1.99			12.90	1.90			12.29	2.51			12.81	1.99		
9-101-bldg.	MW-6B	27.20	13.06	2.03	12.87	2.22	12.79	2.30	13.13	1.96	13.35	1.74	13.13	1.96	13.53	1.56	13.02	2.07			13.08	2.01			12.60	2.49			13.15	1.94		
9-101-bldg.	MW-6C	40.55																														
9-101-bldg.	MW-8C	40.20																														
9-101-bldg.	MW-9A	21.30	12.70	2.04	12.55	2.19	12.46	2.28	12.63	2.11	13.03	1.71	12.84	1.90	13.18	1.56	12.83	1.91			12.83	1.91			12.45	2.29			12.91	1.83		
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	12.65	1.99	12.50	2.14	12.46	2.18	12.71	1.93	12.98	1.66	12.77	1.87	13.11	1.53	12.78	1.86			12.82	1.82			12.39	2.25			12.86	1.78		
9-101-bldg.	MW-11A	19.90	12.70	2.18	12.54	2.34	12.44	2.44	12.31	2.57	11.86	3.02	12.84	2.04	13.23	1.65	12.80	2.08			12.89	1.99			12.39	2.49			12.96	1.92		
9-101-bldg.	MW-12A	20.20																														
9-101-bldg.	MW-13A	19.37	12.20	1.94	11.95	2.19	12.03	2.11	12.32	1.82	12.46	1.68	12.33	1.81	12.56	1.58	12.38	1.76			12.37	1.77			11.77	2.37			12.28	1.86		
9-101-bldg.	MW-13C	35.62	11.95	2.07	11.82	2.20	11.92	2.10	11.93	2.09	12.32	1.70	12.09	1.93	12.33	1.69	12.16	1.86			12.21	1.81			11.60	2.42			12.10	1.92		
9-101-bldg.	MW-14A	19.00																														
9-101-bldg.	MW-14C	33.30	12.04	1.93	11.81	2.16	11.82	2.15	12.05	1.92	12.24	1.73	12.19	1.78	12.47	1.50	12.23	1.74			12.14	1.83			11.80	2.17			12.10	1.87		
9-101-bldg.	MW-14E	82.10																														
9-101-bldg.	MW-15A	20.70																														
9-101-bldg.	MW-15C	34.35	12.62	1.93	12.33	2.22	12.49	2.06	12.66	1.89	12.88	1.67	12.77	1.78	13.14	1.41	12.89	1.66			12.78	1.77			12.41	2.14			12.79	1.76		
9-101-bldg.	MW-15D	51.80																														
9-101-bldg.	MW-16A	20.55			12.61	2.38	12.71	2.28	12.98	2.01	13.21	1.78	12.97	2.02	13.29	1.70	12.94	2.05			13.04	1.95			12.54	2.45			12.99	2.00		
9-101-bldg.	MW-16C	38.30	13.08	1.96	12.83	2.21	12.89	2.15	13.08	1.96	12.79	2.25	13.17	1.87	13.44	1.60	13.09	1.95			13.16	1.88			12.72	2.32			13.14	1.90		
9-101-bldg.	MW-17A	19.00	12.60	2.06	12.51	2.15	12.44	2.22	12.71	1.95	12.91	1.75	12.72	1.94	13.11	1.55	12.71	1.95			12.81	1.85			12.24	2.42			12.81	1.85		
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	12.11	2.19	12.15	2.15	12.37	1.93	12.56	1.74	12.45	1.85	12.85	1.45	12.47	1.83			12.50	1.80			11.91	2.39			12.50	1.80		
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	12.18	1.97	11.95	2.20	12.04	2.11	12.26	1.89	12.56	1.59	12.21	1.94	12.82	1.33	12.46	1.69			12.39	1.76			11.96	2.19			12.45	1.70		
9-101-bldg.	MW-20D	50.15																														
9-101-bldg.	MW-22A	19.20	12.36	1.89	12.20	2.05	12.28	1.97	12.45	1.80	12.62	1.63	12.52	1.73	12.72	1.53	12.62	1.63			12.55	1.70			12.08	2.17			12.55	1.70		
9-101-bldg.	MW-23A	19.50																														
9-101/9-50 bldg.	MW-21A	19.90	12.54	1.91	12.34	2.11	12.36	2.09	12.61	1.84	12.71	1.74	12.69	1.76	13.09	1.36	12.66	1.79			12.69	1.76			12.12	2.33			12.68	1.77		
9-101/9-50 bldg.	MW-21C	34.00																														
9-64-bldg.	BDC-05-02	25.35	12.43	1.98	12.01	2.40	12.01	2.40	12.25	2.16	12.46	1.95	12.20	2.21	12.64	1.77	12.19	2.22			12.39	2.02			11.76	2.65			12.42	1.99	12.31	2.10
9-64-bldg.	BDC-05-03	25.47	12.52	1.89	12.29	2.12	12.08	2.33	12.41	2.00	12.58	1.83	12.43	1.98	12.78	1.63	12.43	1.98			12.58	1.83			11.94	2.47			12.45	1.96		
9-64-bldg.	BDC-05-04	25.36	12.62	1.97	12.17	2.42	12.24	2.35	12.41	2.18	12.69	1.90	12.43	2.16	12.76	1.83	12.37	2.22			12.62	1.97			11.95	2.64			12.58	2.01		
9-64-bldg.	BDC-05-05	24.18	12.36	2.08	11.85	2.59	11.84	2.60	12.06	2.38	12.45	1.99	12.03	2.41	12.45	1.99	12.00	2.44			12.32	2.12			11.58	2.86			12.27	2.17		
9-64-bldg.	BDC-05-07	25.30	12.04	1.95	11.60	2.39	11.62	2.37	11.64	2.35	12.09	1.90	7.84	6.15	12.24	1.75	11.70	2.29			11.96	2.03			11.34	2.65			12.03	1.96		
9-64-bldg.	BDC-05-08	26.75	12.73	1.94	12.37	2.30	12.25	2.42	12.63	2.04	12.76	1.91	12.63	2.04	13.02	1.65	12.62	2.05			12.74	1.93			12.12	2.55			12.71	1.96		
9-64-bldg.	BDC-05-09	24.55	12.45	1.96	12.02	2.39	12.02	2.39	12.26	2.15	12.53	1.88	12.24	2.17	12.66	1.75	12.25	2.16			12.40	2.01			11.79	2.62			12.41	2.00		
9-64-bldg.	BDC-05-10	24.57	12.40	2.01	12.03	2.38	11.99	2.42	12.27	2.14	12.49	1.92	12.23	2.18	12.63	1.78	12.23	2.18			12.42	1.99			11.74	2.67			12.44	1.97		
9-64-bldg.	BDC-05-11	24.85	12.64	2.01	12.22	2.43	12.12	2.53	12.45	2.20	12.67	1.98	12.43	2.22	12.78	1.87	12.48	2.17			12.60	2.05			11.96	2.69			12.58	2.07		
9-64-bldg.	BDC-05-12	24.87	12.66	2.06	12.34	2.38	12.14	2.58	12.57	2.15	12.61	2.11	12.55	2.17	12.91	1.81	12.54	2.18			12.65	2.07			11.94	2.78			12.68	2.04	12.62	2.10
9-64-bldg.	BDC-05-13	24.78	12.42	2.01	12.14	2.29	11.96	2.47	12.34	2.09	12.51	1.92	12.32	2.11	12.66	1.77	12.31	2.12			12.44	1.99			11.45	2.98			12.44	1.99		
9-64-bldg.	BDC-05-14	24.85	12.29	1.93	11.95	2.27	11.66	2.56	12.17	2.05	12.30	1.92	12.10	2.12	12.47	1.75	12.14	2.08			12.26	1.96			11.71	2.51			12.25	1.97		
9-64-bldg.	BDC-05-15	24.48	12.01	1.96	11.74	2.23	11.52	2.45	11.93	2.04	12.06	1.91	11.94	2.03	12.28	1.69	11.89	2.08			12.02	1.95			11.26	2.71			11.94	2.03		
9-64-bldg.	BDC-05-16	24.89	12.12	1.95	11.84	2.23	11.69	2.38	12.09	1.98	12.24	1.83	12.12	1.95	12.38	1.69	12.04	2.03			12.14	1.93			11.51	2.56			12.10	1.97	12.13	1.94
9-64-bldg.	BDC-05-17	24.82	12.38	1.87	12.09	2.16	11.89	2.36	12.31	1.94	12.44	1.81	12.33	1.92	12.61	1.64	12.18	2.07			12.37	1.88			11.77	2.48			12.33	1.92		
9-64-bldg.	BDC-05-18	24.69	11.85	1.94	11.51	2.28	11.39	2.40	11.68	2.11	11.96	1.83	11.72	2.07	12.10	1.69	11.69	2.10			11.87	1.92			11.19	2.60			11.73	2.06	11.77	2.02
9-64-bldg.	BDC-05-19	24.85	12.57	1.99	12.28	2.28	12.03	2.53	12.48	2.08	12.48	2.08	10.34	4.22	12.79	1.77	12.46	2.10			12.48	2.08			11.97	2.59			12.58	1.98	12.52	2.04
9-64-bldg.	BDC-05-20	24.80	12.40	1.94	12.11	2.23	11.91	2.43	12.42	1.92	12.51	1.83	12.41	1.93	12.77	1.57	12.38	1.96			12.49	1.85			11.91	2.43			12.41	1.93	12.44	1.90
9-64-bldg.	BDC-05-21	24.86	12.30	1.89	12.04	2.15	11.85	2.34	12.28	1.91	12.44	1.75	12.25	1.94	12.66	1.53	12.33	1.86			12.37	1.82			11.82	2.37			12.31	1.88	12.29	1.90
9-64-bldg.	BDC-05-22	25.07	12.18	1.98	12.02	2.14	11.73	2.43	12.22	1.94	12.33	1.83	12.22	1.94	12.61	1.55	12.22	1.94			11.31	2.85			11.73	2.43			12.21	1.95	12.22	1.94
9-64-bldg.	BDC-05-23	25.10	12.72	1.74	12.41	2.05	12.23	2.23	12.69	1.77	12.76	1.70	12.64	1.82	13.12	1.34	12.76	1.70			12.75	1.71			12.26	2.20			12.69	1.77	12.74	1.72
9-64-bldg.	BDC-05-24	24.73	12.46	1.73	11.93	2.26	11.69	2.50	12.15	2.04	12.29	1.90	12.08	2.11	12.50	1.69	12.15	2.04			12.26	1.93			11.66	2.53			12.10	2.09	12.23	1.96
9-60 bldg.	BDC-101	18.42	12.25	2.22	11.71	2.76	11.82	2.65	11.98	2.49	12.38	2.09	11.93	2.54	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
9-60 bldg.	BDC-102	18.83	11.98	2.29	11.49	2.78	11.63	2.64	11.75	2.52	12.15	2.12	10.70	3.57	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
9-60 bldg.	BDC-103	18.51	12.00	2.34	11.52	2.82	11.59	2.75	11.76	2.58	12.22	2.12	11.69	2.65	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
9-60 bldg.	BDC-104	18.90	11.84	2.32	11.29	2.87	11.39	2.77	11.50	2.66	12.03	2.13	11.48	2.68	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
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 B-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			May 2017		February 2017		November 2016		August 2016		April 2016		January 2016		October 2015		July 2015		April 2015		January 2015		November 2014		August 2014		May 2014		February 2014		November 2013	
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	11.97	2.83			12.13	2.67			12.38	2.42			12.80	2.00			12.65	2.15			12.22	2.58			12.10	2.70			12.82	1.98
9-101-bldg.	MW-6B	27.20	12.31	2.78			12.82	2.27			12.77	2.32			13.16	1.93			13.02	2.07			12.58	2.51			14.44	0.65			13.16	1.93
9-101-bldg.	MW-6C	40.55																														
9-101-bldg.	MW-8C	40.20																														
9-101-bldg.	MW-9A	21.30	12.07	2.67			12.18	2.56			12.37	2.37			12.83	1.91			12.64	2.10			12.18	2.56			12.07	2.67			12.88	1.86
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
9-101-bldg.	MW-10C	40.40	11.97	2.67			12.16	2.48			12.37	2.27			12.66	1.96			12.57	2.05			12.06	2.56			11.91	2.71			12.73	1.89
9-101-bldg.	MW-11A	19.90	12.03	2.85			12.14	2.74			12.47	2.41			12.87	2.01			12.74	2.14			12.31	2.57			12.10	2.78			12.89	1.99
9-101-bldg.	MW-12A	20.20																					12.38	2.45			12.17	2.66			12.98	1.85
9-101-bldg.	MW-13A	19.37	11.57	2.57			11.55	2.59			11.82	2.32			12.23	1.91			12.19	1.95			11.71	2.43			11.62	2.52			12.37	1.77
9-101-bldg.	MW-13C	35.62	11.39	2.63			11.41	2.61			11.71	2.31			12.08	1.94			12.07	1.95			11.59	2.43			11.49	2.53			12.23	1.79
9-101-bldg.	MW-14A	19.00																					11.93	2.44			11.85	2.52			12.59	1.78
9-101-bldg.	MW-14C	33.30	11.40	2.57			11.33	2.64			11.78	2.19			11.95	2.02			11.95	2.02			11.54	2.43			11.49	2.48			12.17	1.80
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
9-101-bldg.	MW-15C	34.35	12.00	2.55			11.98	2.57			12.45	2.10			12.19	1.98			12.29	1.88			11.70	2.47			11.71	2.46			12.42	1.75
9-101-bldg.	MW-15D	51.80																														
9-101-bldg.	MW-16A	20.55	12.18	2.81			12.32	2.67			12.60	2.39			12.96	2.03			12.85	2.14			12.40	2.59			12.22	2.77			13.06	1.93
9-101-bldg.	MW-16C	38.30	12.33	2.71			12.54	2.50			12.70	2.34			13.14	1.90			13.02	2.02			12.58	2.46			12.32	2.72			13.24	1.80
9-101-bldg.	MW-17A	19.00	11.97	2.69			12.11	2.55			12.28	2.38			12.83	1.97			12.67	2.13			12.25	2.55			12.11	2.69			12.90	1.90
9-101-bldg.	MW-17C	35.00																														
9-101-bldg.	MW-17D	52.50																														
9-101-bldg.	MW-18A	20.02	11.73	2.57			11.68	2.62			11.87	2.43			12.36	1.94			12.26	2.04			11.86	2.44			11.70	2.60			12.23	2.07
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	11.59	2.56			11.55	2.60			11.95	2.20			12.14	2.01			12.19	1.96			11.61	2.54			11.58	2.57			12.40	1.75
9-101-bldg.	MW-20D	50.15																														
9-101-bldg.	MW-22A	19.20	11.79	2.46			11.79	2.46			12.12	2.13			12.34	1.91			12.33	1.92			11.96	2.29			11.90	2.35			12.42	1.83
9-101-bldg.	MW-23A	19.50																														
9-101/9-50 bldg.	MW-21A	19.90	11.97	2.48			11.85	2.60			12.10	2.35			12.55	1.90			12.48	1.97			12.06	2.39			11.90	2.55			12.39	2.06
9-101/9-50 bldg.	MW-21C	34.00																														
9-64-bldg.	BDC-05-02	25.35	11.46	2.95	11.24	3.17	11.68	2.73	12.53	1.88	11.77	2.64	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
9-64-bldg.	BDC-05-03	25.47	11.58	2.83			11.71	2.70			11.86	2.55			12.33	2.08			12.19	2.22			11.79	2.62			11.76	2.65			12.43	1.98
9-64-bldg.	BDC-05-04	25.36	11.62	2.97			11.86	2.73			11.95	2.64			12.54	2.05			12.26	2.33			11.95	2.64			11.93	2.66			12.51	2.08
9-64-bldg.	BDC-05-05	24.18	11.19	3.25			11.52	2.92			11.57	2.87			12.18	2.26			11.86	2.58			11.53	2.91			11.47	2.97			12.15	2.29
9-64-bldg.	BDC-05-07	25.30	11.02	2.97			11.22	2.77			11.38	2.61			11.88	2.11			11.67	2.32			11.37	2.62			11.29	2.70			11.96	2.03
9-64-bldg.	BDC-05-08	26.75	11.88	2.79			11.95	2.72			12.11	2.56			12.62	2.05			12.47	2.20			12.10	2.57			12.07	2.60			12.72	1.95
9-64-bldg.	BDC-05-09	24.55	11.49	2.92			11.68	2.73			11.80	2.61			12.30	2.11			12.10	2.31			11.79	2.62			11.71	2.70			12.37	2.04
9-64-bldg.	BDC-05-10	24.57	11.31	3.10			11.62	2.79			11.80	2.61			12.27	2.14			12.11	2.30			11.72	2.69			11.70	2.71			12.36	2.05
9-64-bldg.	BDC-05-11	24.85	11.71	2.94			11.78	2.87			12.02	2.63			12.99	1.66			12.33	2.32			11.93	2.72			11.91	2.74			12.59	2.06
9-64-bldg.	BDC-05-12	24.87	11.80	2.92	11.50	3.22	11.91	2.81	12.80	1.92	12.11	2.61	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
9-64-bldg.	BDC-05-13	24.78	11.62	2.81			11.68	2.75			11.87	2.56			12.37	2.06			12.20	2.23			11.85	2.58			11.86	2.57			12.44	1.99
9-64-bldg.	BDC-05-14	24.85	11.39	2.83			11.52	2.70			11.71	2.51			12.18	2.04			12.03	2.19			11.70	2.52			11.68	2.54			12.25	1.97
9-64-bldg.	BDC-05-15	24.48	11.20	2.77			11.28	2.69			11.49	2.48			11.95	2.02			11.83	2.14			11.47	2.50			11.42	2.55			12.04	1.93
9-64-bldg.	BDC-05-16	24.89	11.32	2.75	11.05	3.02	11.43	2.64	12.31	1.76	11.65	2.42	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
9-64-bldg.	BDC-05-17	24.82	11.56	2.69			11.65	2.60			11.86	2.39			12.29	1.96			12.12	2.13			11.86	2.39			11.83	2.42			12.34	1.91
9-64-bldg.	BDC-05-18	24.69	10.92	2.87	10.70	3.09	11.13	2.66	11.96	1.83	11.22	2.57	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
9-64-bldg.	BDC-05-19	24.85	11.73	2.83	11.43	3.13	11.82	2.74	12.68	1.88	11.99	2.57	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
9-64-bldg.	BDC-05-20	24.80	11.66	2.68	11.34	3.00	11.74	2.60	12.62	1.72	11.92	2.42	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
9-64-bldg.	BDC-05-21	24.86	11.49	2.70	11.16	3.03	11.57	2.62	12.50	1.69	11.80	2.39	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
9-64-bldg.	BDC-05-22	25.07	11.45	2.71	11.16	3.00	11.59	2.57	12.42	1.74	11.73	2.43	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
9-64-bldg.	BDC-05-23	25.10	11.94	2.52	11.48	2.98	12.02	2.44	12.88	1.58	12.25	2.21	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
9-64-bldg.	BDC-05-24	24.73	11.39	2.80	11.10	3.09	11.48	2.71	12.37	1.82	11.68	2.51	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
9-60 bldg.	BDC-101	18.42	11.02	3.45	10.97	3.50	11.55	2.92	12.30	2.17	11.27	3.20	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
9-60 bldg.	BDC-102	18.83	10.86	3.41	10.73	3.54	11.32	2.95	12.07	2.20	11.09	3.18	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
9-60 bldg.	BDC-103	18.51	10.76	3.58	10.69	3.65	11.39	2.95	12.13	2.21	10.97	3.37	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
9-60 bldg.	BDC-104	18.90	10.52	3.64	10.51	3.65	11.03	3.13	11.89	2.27	10.73	3.43	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
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 B-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			August 2013		May 2013		February 2013		November 2012		May 2012		November 2011		July 2011		May 2011		November 2010		May 2010		November 2009		May 2009		November 2008		May 2008		November 2007	
Well Location / Bldg.	Well ID No.	Well Depth (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)	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			12.92	1.88			12.82	1.98	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
9-101-bldg.	MW-6B	27.20			13.27	1.82			13.17	1.92	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
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
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
9-101-bldg.	MW-9A	21.30			12.80	1.94			12.83	1.91	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
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
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
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
9-101-bldg.	MW-10A	20.20			12.72	1.97			12.77	1.92	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
9-101-bldg.	MW-10C	40.40			12.65	1.97			12.70	1.92	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
9-101-bldg.	MW-11A	19.90			12.84	2.04			12.19	2.69	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
9-101-bldg.	MW-12A	20.20			12.88	1.95			13.01	1.82	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
9-101-bldg.	MW-13A	19.37			12.36	1.78			12.27	1.87	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
9-101-bldg.	MW-13C	35.62			12.22	1.80			12.11	1.91	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
9-101-bldg.	MW-14A	19.00			12.65	1.72			12.53	1.84	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
9-101-bldg.	MW-14C	33.30			12.25	1.72			12.07	1.90	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
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
9-101-bldg.	MW-15A	20.70			12.48	1.69			12.34	1.83	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
9-101-bldg.	MW-15C	34.35			12.54	1.63			12.27	1.90	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
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
9-101-bldg.	MW-16A	20.55			13.07	1.92			13.02	1.97	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
9-101-bldg.	MW-16C	38.30			13.25	1.79			13.17	1.87	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
9-101-bldg.	MW-17A	19.00			12.98	1.82			12.78	2.02	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
9-101-bldg.	MW-17C	35.00																														
9-101-bldg.	MW-17D	52.50																														
9-101-bldg.	MW-18A	20.02			12.58	1.72			12.39	1.91	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
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
9-101-bldg.	MW-18D	52.85																														
9-101-bldg.	MW-19A	16.86			10.74	1.49																	10.11	2.12	10.49	1.74	10.47	1.76	10.49	1.74	10.68	1.55
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
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
9-101-bldg.	MW-20C	35.32			12.50	1.65			12.22	1.93	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
9-101-bldg.	MW-20D	50.15																														
9-101-bldg.	MW-22A	19.20			12.72	1.53			12.42	1.83	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
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
9-101/9-50 bldg.	MW-21A	19.90			12.80	1.65			12.60	1.85	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	12.47	1.94	12.29	2.12	12.19	2.22	12.31	2.10	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
9-64-bldg.	BDC-05-03	25.47			12.36	2.05			12.36	2.05	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
9-64-bldg.	BDC-05-04	25.36			12.17	2.42			12.52	2.07	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
9-64-bldg.	BDC-05-05	24.18			12.13	2.31			13.40	1.04	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
9-64-bldg.	BDC-05-07	25.30			11.92	2.07			11.97	2.02	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
9-64-bldg.	BDC-05-08	26.75			12.64	2.03			12.64	2.03	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			12.31	2.10			12.36	2.05	11.90	2.51	12.68	1.73	12.27	2.13																
9-64-bldg.	BDC-05-10	24.57			12.31	2.10			12.30	2.11	11.95	2.46	12.74	1.67	12.27	2.14																
9-64-bldg.	BDC-05-11	24.85			12.51	2.14			12.55	2.10	12.13	2.52	12.92	1.73	12.60	2.05																
9-64-bldg.	BDC-05-12	24.87	12.78	1.94	12.61	2.11	12.53	2.19	12.66	2.06	12.24	2.48	13.00	1.72	12.57	2.15																
9-64-bldg.	BDC-05-13	24.78			12.40	2.03			12.44	1.99	12.02	2.41	12.78	1.65	12.35	2.08																
9-64-bldg.	BDC-05-14	24.85			12.21	2.01			12.29	1.93	11.83	2.39	12.55	1.67	12.23	1.99																
9-64-bldg.	BDC-05-15	24.48			12.07	1.90			11.97	2.00	11.63	2.34	12.34	1.63	11.95	2.02																
9-64-bldg.	BDC-05-16	24.89	12.25	1.82	12.19	1.88	12.04	2.03	12.09	1.98	11.78	2.29	12.44	1.63	12.05	2.02																
9-64-bldg.	BDC-05-17	24.82			12.30	1.95			12.27	1.98	11.65	2.60	12.60	1.65	12.27	1.98																
9-64-bldg.	BDC-05-18	24.69	11.90	1.89	11.72	2.07	11.63	2.16	11.75	2.04	11.34	2.45	12.10	1.69	11.84	1.95																
9-64-bldg.	BDC-05-19	24.85	12.68	1.88	12.52	2.04	12.44	2.12	12.60	1.96	12.15	2.41	12.90	1.66	12.59	1.97																
9-64-bldg.	BDC-05-20	24.80	12.55	1.79	12.38	1.96	12.41	1.93	12.44	1.90	12.08	2.26	12.75	1.59	12.47	1.87																
9-64-bldg.	BDC-05-21	24.86	12.42	1.77	12.26	1.93	12.25	1.94	12.30	1.89	11.94	2.25	12.59	1.60	12.34	1.85																
9-64-bldg.	BDC-05-22	25.07	12.38	1.78	12.22	1.94	12.18	1.98	12.24	1.92	11.87	2.29	12.54	1.62	12.27	1.89																
9-64-bldg.	BDC-05-23	25.10	12.83	1.63	12.70	1.76	12.56	1.90	12.74	1.72	12.39	2.07	13.08	1.38	12.79	1.67																
9-64-bldg.	BDC-05-24	24.73	12.34	1.85	12.19	2.00	12.09	2.10	12.20	1.99	11.82	2.37	12.59	1.60	12.28	1.91																
9-60 bldg.	BDC-101	18.42	12.27	2.20	11.99	2.48	11.77	2.70	12.20	2.27	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
9-60 bldg.	BDC-102	18.83	12.04	2.23	11.79	2.48	11.55	2.72	11.93	2.34	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
9-60 bldg.	BDC-103	18.51	12.06	2.28	11.71	2.63	11.43	2.91	11.88	2.46	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
9-60 bldg.	BDC-104	18.90	11.87	2.29	11.51	2.65	11.24	2.92	11.78	2.38	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 B-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			May 2007		February 2007		November 2006		August 2006		May 2006		February 2006		November 2005		August 2005		May 2005		February 2005		October 2004		August 2004		May 2004		November 2003		June 2003	
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)	Depth to Water (ft)	Water Elevation (ft)
9-101-bldg.	MW-6A	24.25	12.97	1.83	12.42	2.38	12.30	2.50	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	13.32	1.77	12.75	2.34	12.67	2.42	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
9-101-bldg.	MW-6C	40.55	13.27	1.80	12.69	2.38	12.65	2.42	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
9-101-bldg.	MW-8C	40.20	13.00	1.92			12.21	2.71			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
9-101-bldg.	MW-9A	21.30	12.90	1.84	12.36	2.38	12.12	2.62	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
9-101-bldg.	MW-9B	26.90	12.71	1.88	12.19	2.40	11.95	2.64	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
9-101-bldg.	MW-9C	38.80	12.81	1.85	12.20	2.46	12.05	2.61	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
9-101-bldg.	MW-9D	56.00	12.88	1.78			12.30	2.36			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
9-101-bldg.	MW-10A	20.20	12.72	1.97	12.35	2.34	12.06	2.63	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
9-101-bldg.	MW-10C	40.40	12.77	1.85			11.99	2.63			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
9-101-bldg.	MW-11A	19.90	12.96	1.92			11.85	3.03			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
9-101-bldg.	MW-12A	20.20	13.00	1.83			11.89	2.94			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
9-101-bldg.	MW-13A	19.37	12.33	1.81			11.50	2.64			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
9-101-bldg.	MW-13C	35.62	12.20	1.82			11.35	2.67			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
9-101-bldg.	MW-14A	19.00	12.73	1.64	12.03	2.34	11.46	2.91	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
9-101-bldg.	MW-14C	33.30	12.32	1.65			11.72	2.25			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
9-101-bldg.	MW-14E	82.10	7.59	6.59			6.71	7.47			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
9-101-bldg.	MW-15A	20.70	12.52	1.65			11.93	2.24			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
9-101-bldg.	MW-15C	34.35	12.55	1.62			11.91	2.26			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
9-101-bldg.	MW-15D	51.80	12.76	1.65			12.14	2.27			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
9-101-bldg.	MW-16A	20.55	13.11	1.88			12.05	2.94			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
9-101-bldg.	MW-16C	38.30	13.23	1.81			12.22	2.82			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
9-101-bldg.	MW-17A	19.00	12.80	2.00			12.04	2.76			12.85	1.95			12.74	2.30							12.81	1.99			13.05	1.75	12.83	1.97	13.10	1.70
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	12.45	1.85			11.57	2.73			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	12.74	1.89			11.85	2.78			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
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	10.55	1.68	9.92	2.31	9.59	2.64	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	10.50	1.73			9.50	2.73			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
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	12.30	2.01			12.10	2.21			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	12.28	1.87			11.67	2.48			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
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	12.64	1.61	11.90	2.35	12.11	2.14	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	12.90	1.37	12.03	2.24	13.02	1.25	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																				
9-101/9-50 bldg.	MW-21C	34.00																														
9-64-bldg.	BDC-05-02	25.35	12.23	2.14			11.53	2.84			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
9-64-bldg.	BDC-05-03	25.47	12.45	1.96			11.75	2.66			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
9-64-bldg.	BDC-05-04	25.36	12.54	2.05			11.85	2.74			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
9-64-bldg.	BDC-05-05	24.18	12.07	2.37			11.51	2.93			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
9-64-bldg.	BDC-05-07	25.30	11.96	2.03			11.27	2.72			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
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	12.13	2.34			11.42	3.05			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
9-60 bldg.	BDC-102	18.83	11.89	2.38			11.13	3.14			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
9-60 bldg.	BDC-103	18.51	11.87	2.47			11.10	3.24			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
9-60 bldg.	BDC-104	18.90																														
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																									9.96	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			

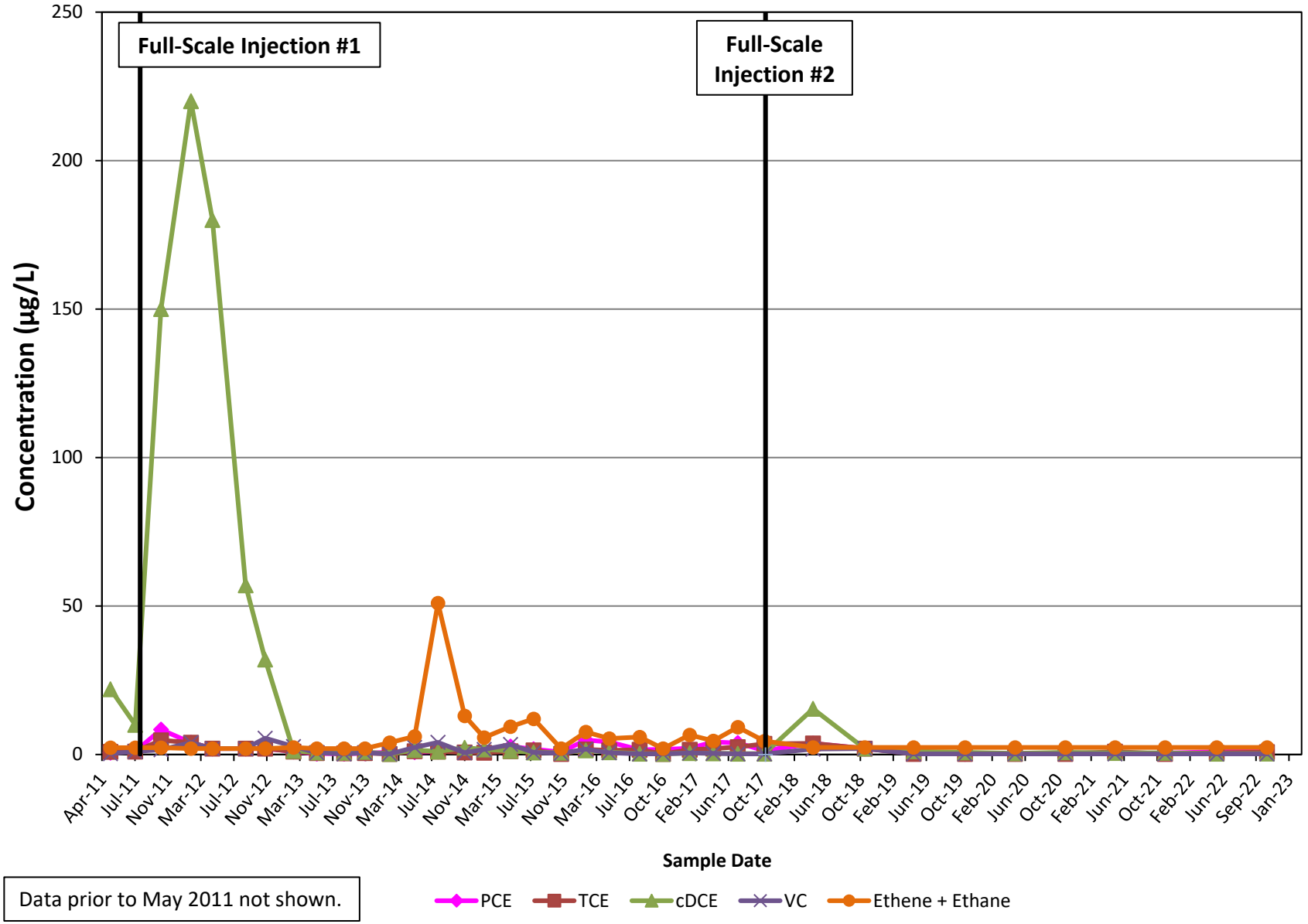
Table B-1
Cumulative Groundwater Level Measurements
November 1999 to Present
Boeing Developmental Center
Tukwila, Washington

			December 2002		June 2002		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)	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	13.01	1.82	13.21	1.62	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	13.16	1.83	13.36	1.63	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	13.19	1.73	13.27	1.65	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	12.90	1.74	12.94	1.70	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	12.96	1.76	13.00	1.72	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	12.90	1.78	12.94	1.74	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	13.17	1.49	13.20	1.46	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	13.03	1.66	12.94	1.75	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	12.90	1.72	12.84	1.78	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	13.13	1.75	12.97	1.91	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	13.20	1.63	13.03	1.80	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	12.38	1.76	12.50	1.64	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	12.22	1.80	12.31	1.71	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	12.70	1.77	12.85	1.62	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	12.18	1.79	12.33	1.64	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	7.69	6.49	7.64	6.54	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	12.55	1.62	12.52	1.65	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	12.47	1.70	12.50	1.67	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	12.80	1.61	13.02	1.39	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	13.03	1.96	13.02	1.97	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	13.33	1.71	13.29	1.75	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	12.99	1.81	13.07	1.73	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	12.82	1.81	12.92	1.71			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	10.41	1.82	10.71	1.52			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	12.26	1.89	12.55	1.60			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	12.79	1.66	12.74	1.71	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	10.53	1.67	10.52	1.68	9.87	2.33	10.50	1.70						
9-64-bldg.	BDC-05-02	25.35	12.40	1.97	12.25	2.12	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	12.60	1.81	12.47	1.94	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	12.71	1.88	12.57	2.02	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	12.42	2.02	12.22	2.22	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	12.11	1.88	12.02	1.97	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	12.34	2.13	12.07	2.40	11.29	3.18	12.30	2.17						
9-60 bldg.	BDC-102	18.83	12.14	2.13	11.82	2.45	11.05	3.22	12.06	2.21						
9-60 bldg.	BDC-103	18.51	12.15	2.19	11.81	2.53	11.03	3.31	12.04	2.30						
9-60 bldg.	BDC-104	18.90														
9-52-bldg.	952MW-1	17.40			11.10	2.38	10.21	3.27	11.25	2.23	11.50	1.98			10.97	2.51
9-52-bldg.	952MW-2	17.54			11.37	2.63	10.46	3.54	11.48	2.52	11.76	2.24			11.25	2.75
9-52-bldg.	952MW-3	17.95			11.40	2.36	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 C

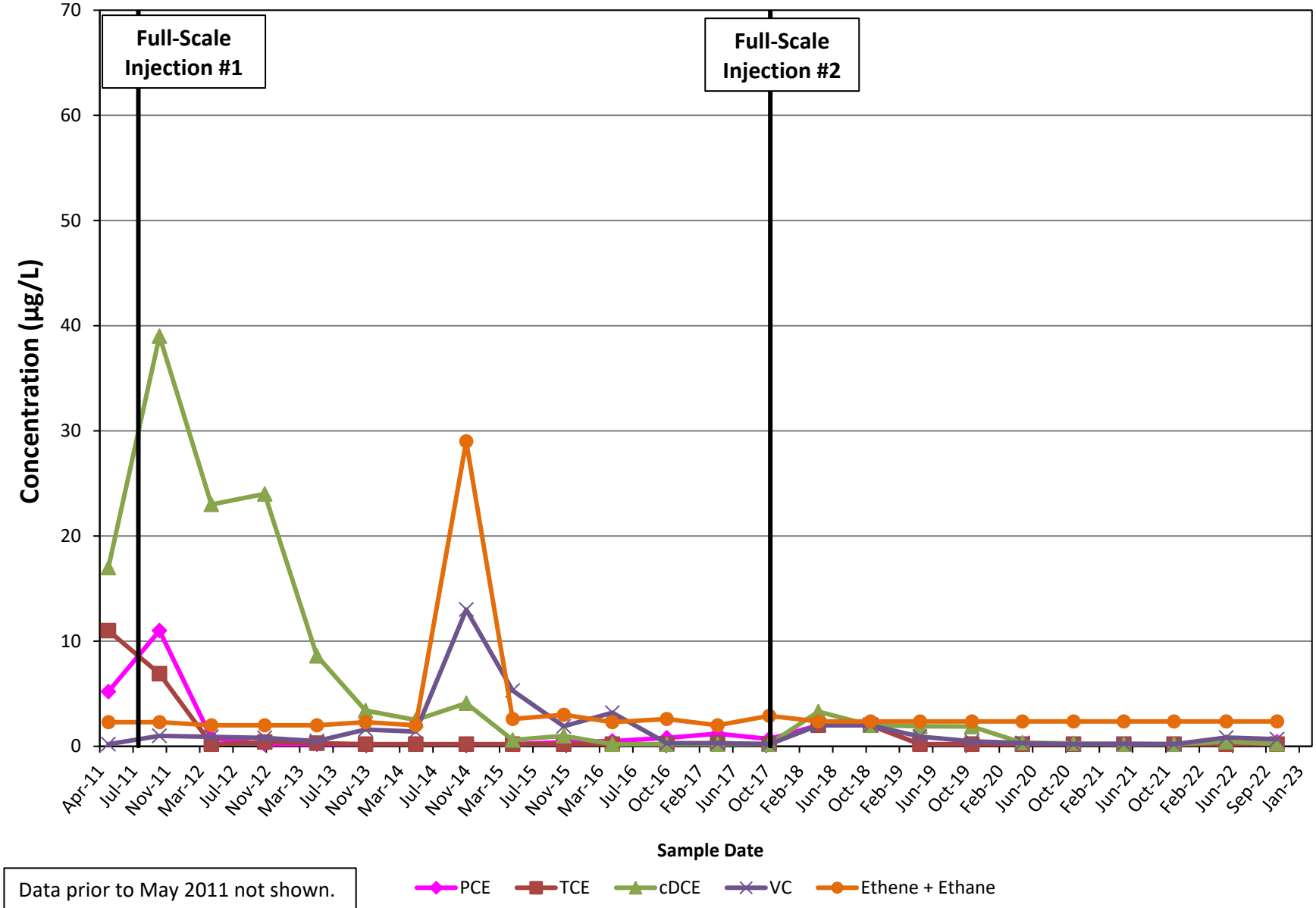
SWMU-17 Time Plots: VOC Concentrations



Data prior to May 2011 not shown.

LANDAU ASSOCIATES	Boeing Developmental Center Tukwila, Washington	**SWMU-17: VOCs at Source Zone Injection Well BDC-05-02**

Figure
C-1



Data prior to May 2011 not shown.

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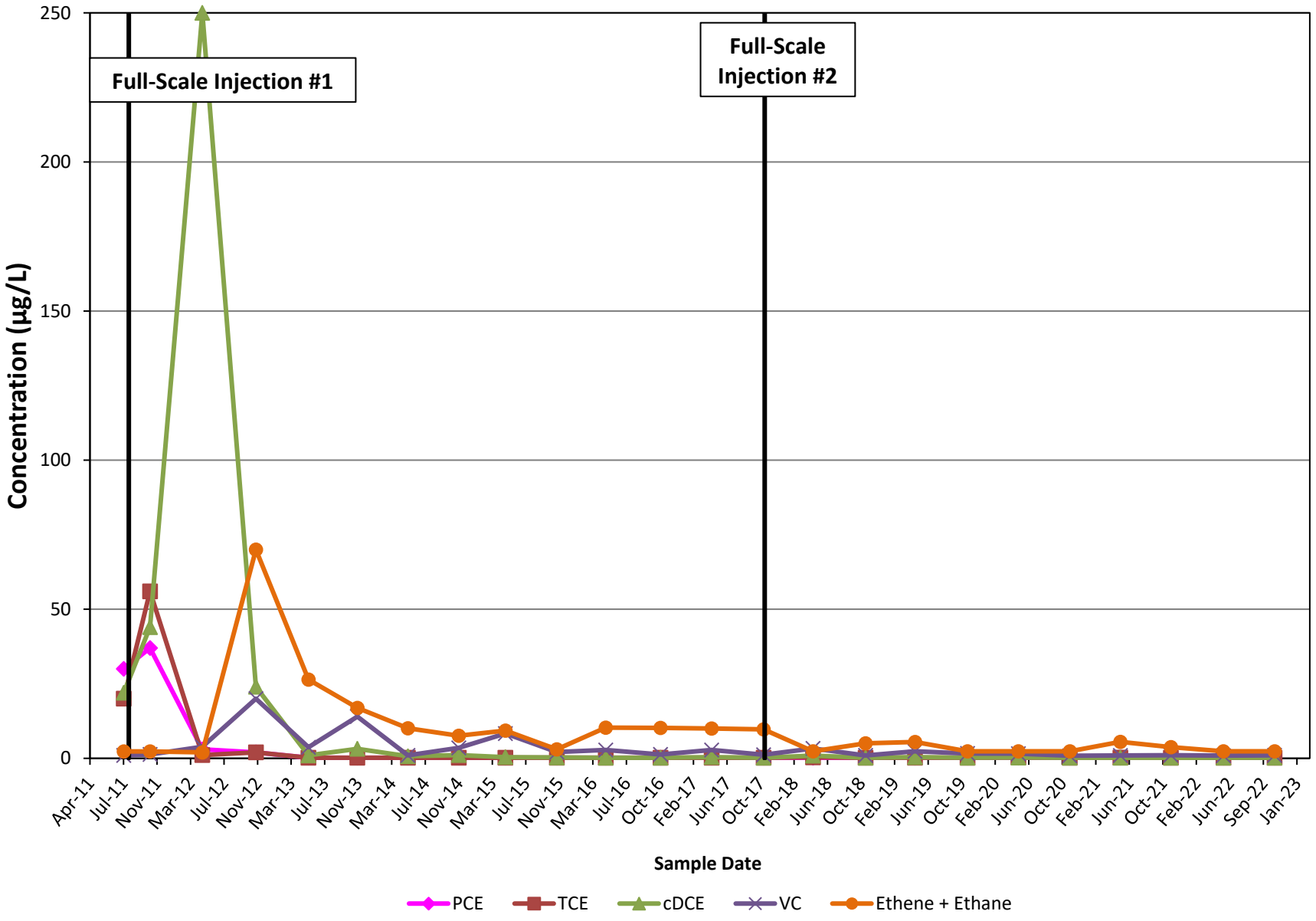
Boeing Developmental Center
Tukwila, Washington

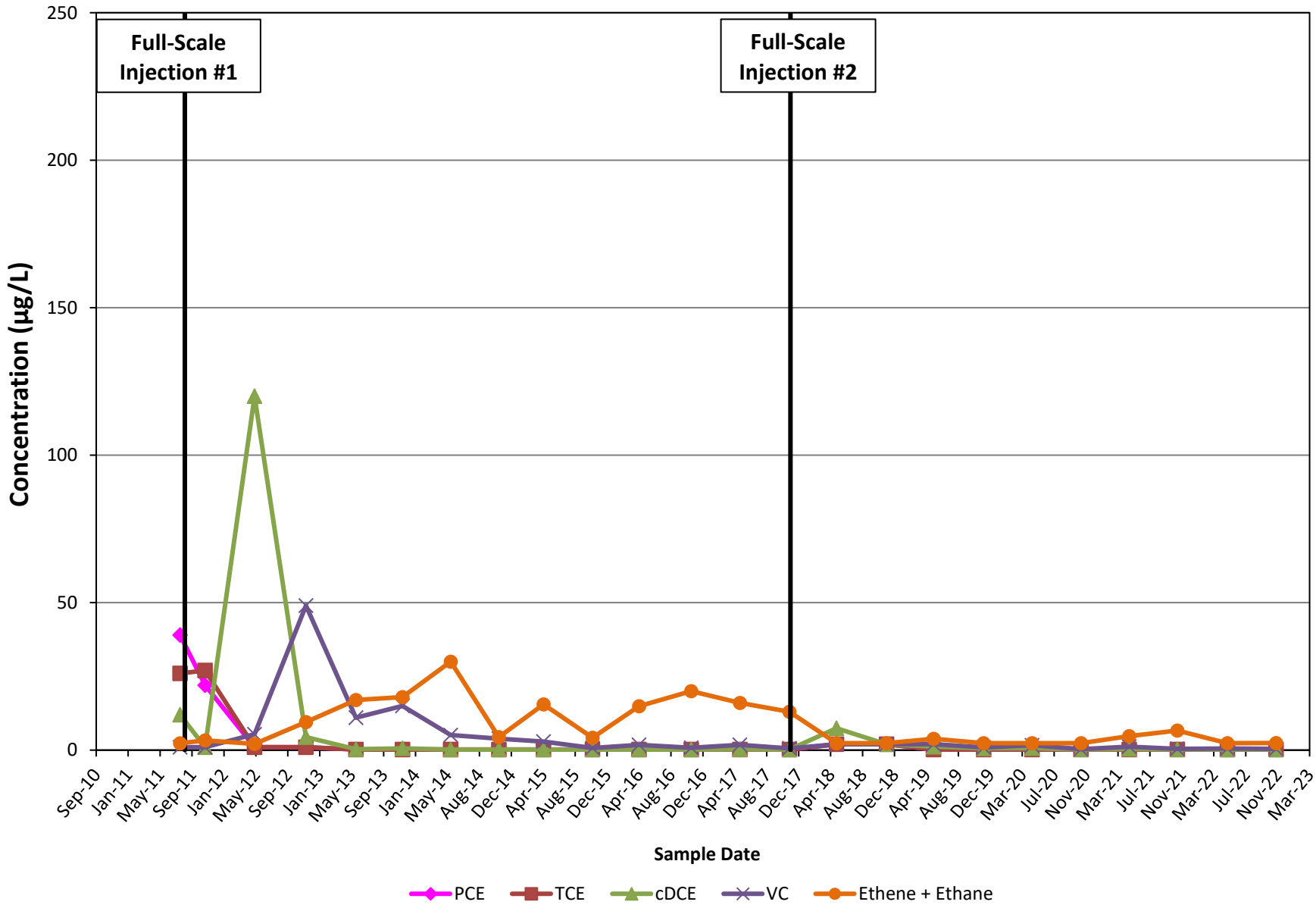
SWMU-17: VOCs at Source Zone Injection Well BDC-05-07

Figure
C-2



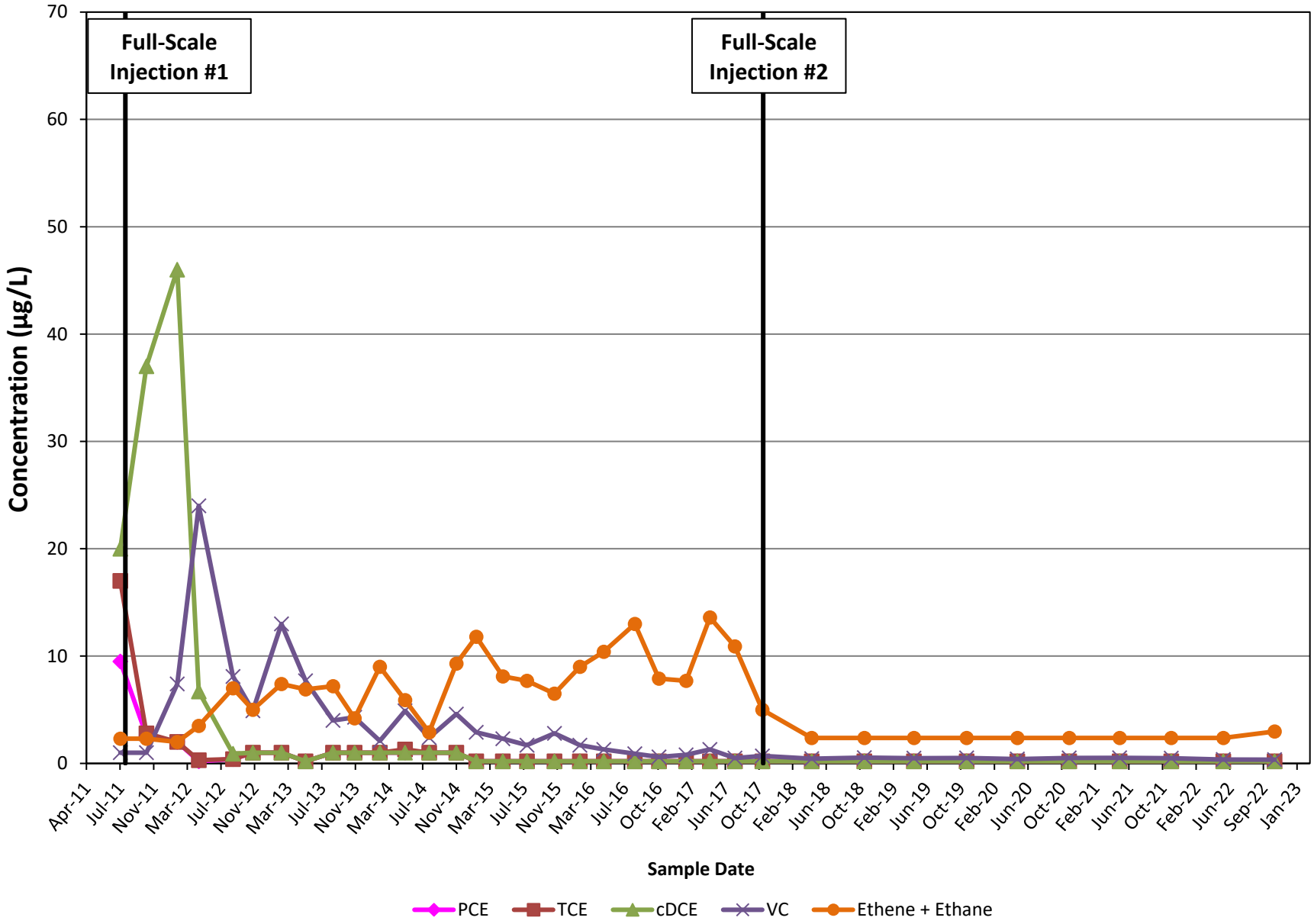
LANDAU ASSOCIATES	Boeing Developmental Center Tukwila, Washington	**SWMU-17: VOCs at Source Zone Injection Well BDC-05-09**

Figure
C-3



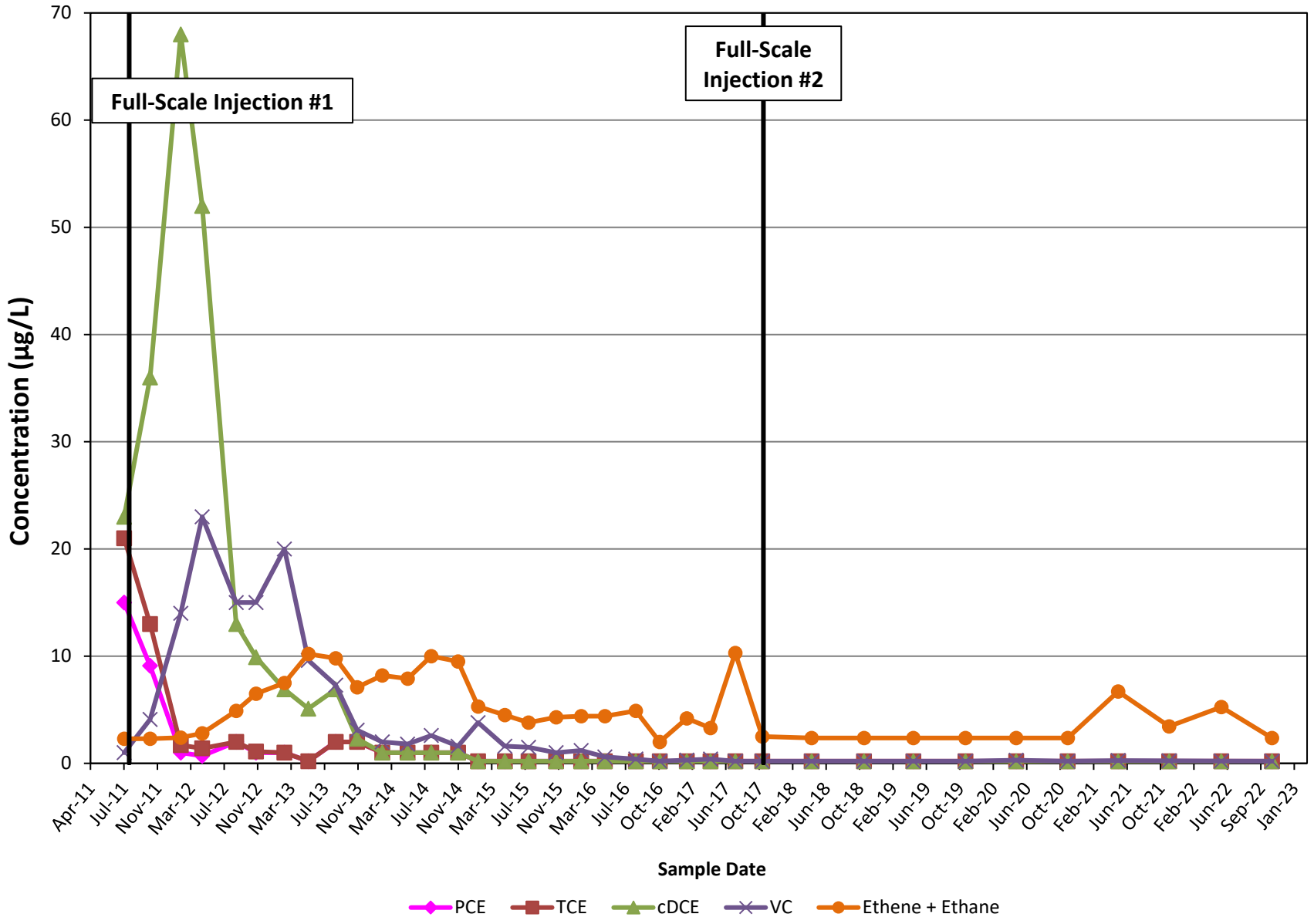
LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**SWMU-17: VOCs at Source Zone Injection Well BDC-05-10**	Figure C-4



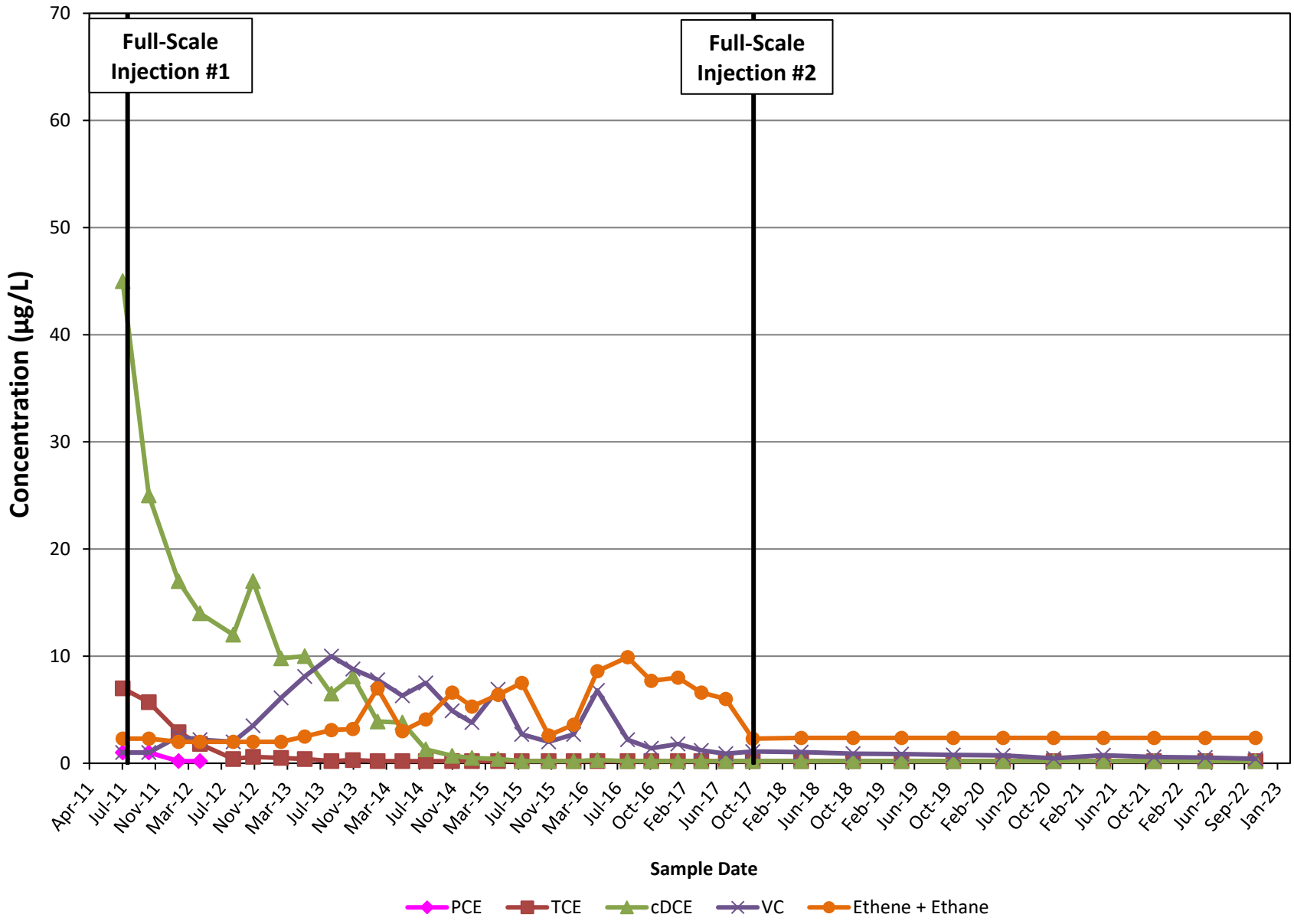
LANDAU ASSOCIATES	Boeing Developmental Center Tukwila, Washington	**SWMU-17: VOCs at Source Zone Injection Well BDC-05-16**

Figure
C-5



LANDAU ASSOCIATES	Boeing Developmental Center Tukwila, Washington	**SWMU-17: VOCs at Source Zone Injection Well BDC-05-19**

Figure
C-6



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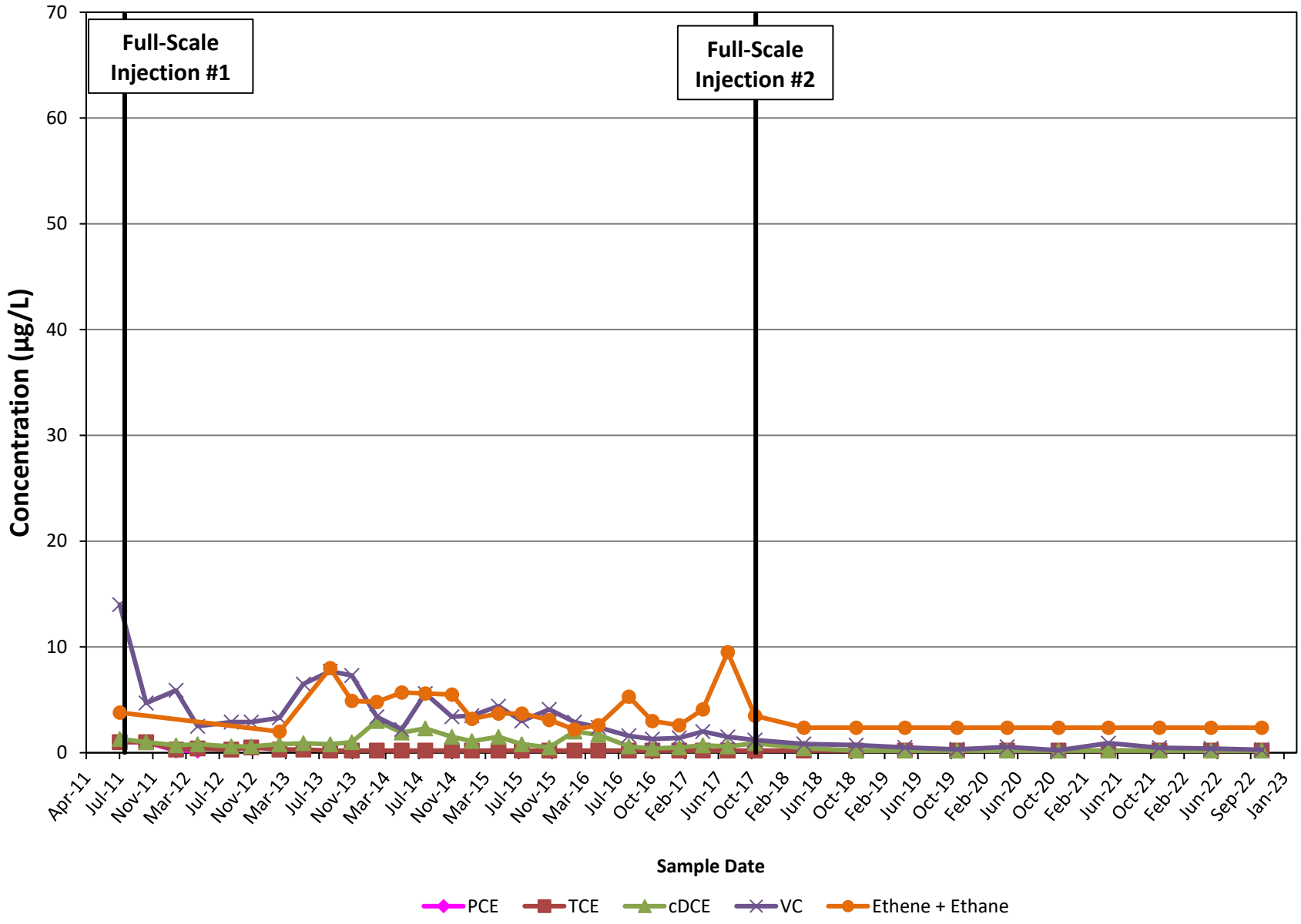
Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOCs at Source Zone Injection Well BDC-05-20

Figure
C-7



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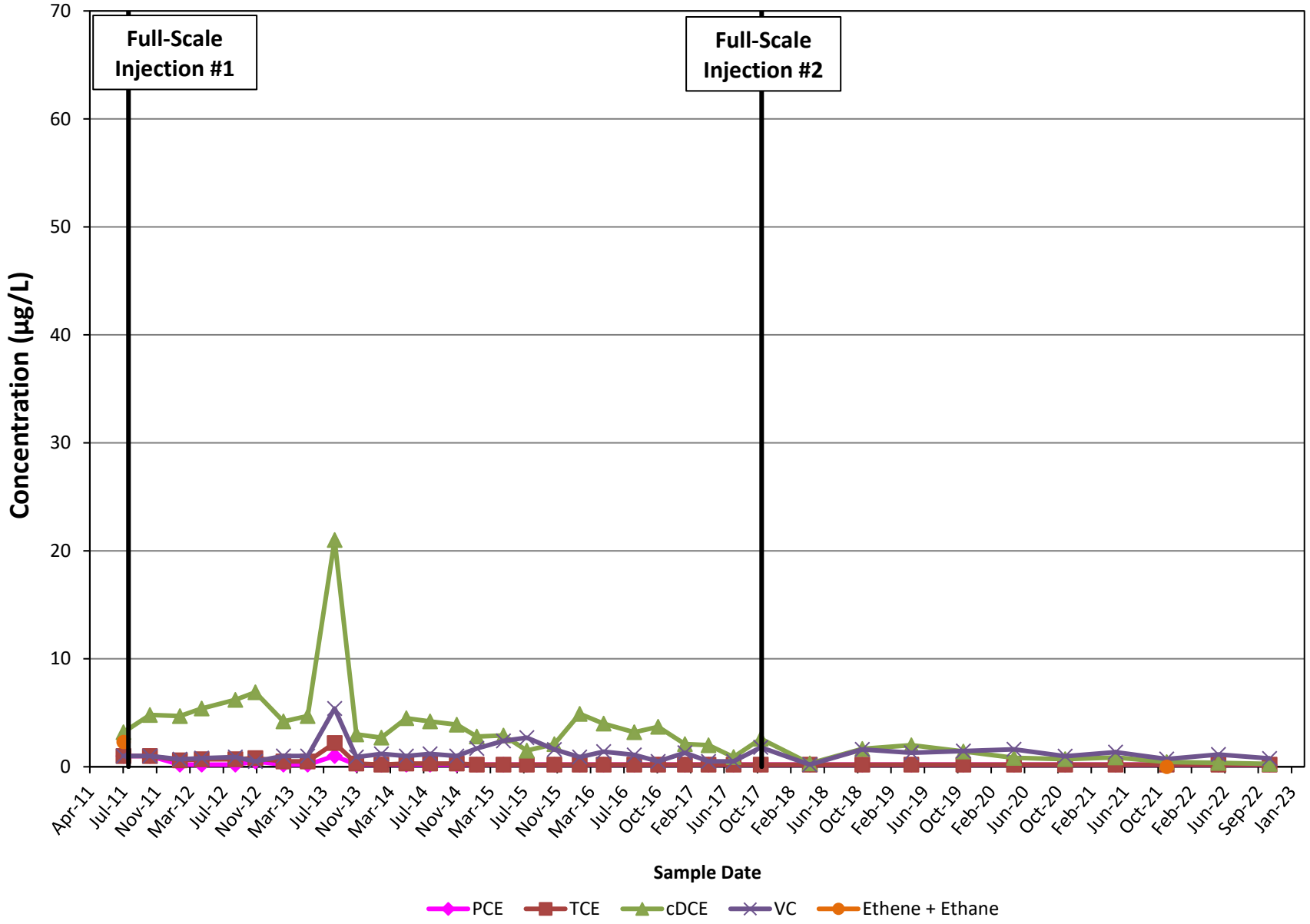
Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOCs at Source Zone Injection Well BDC-05-21

Figure
C-8



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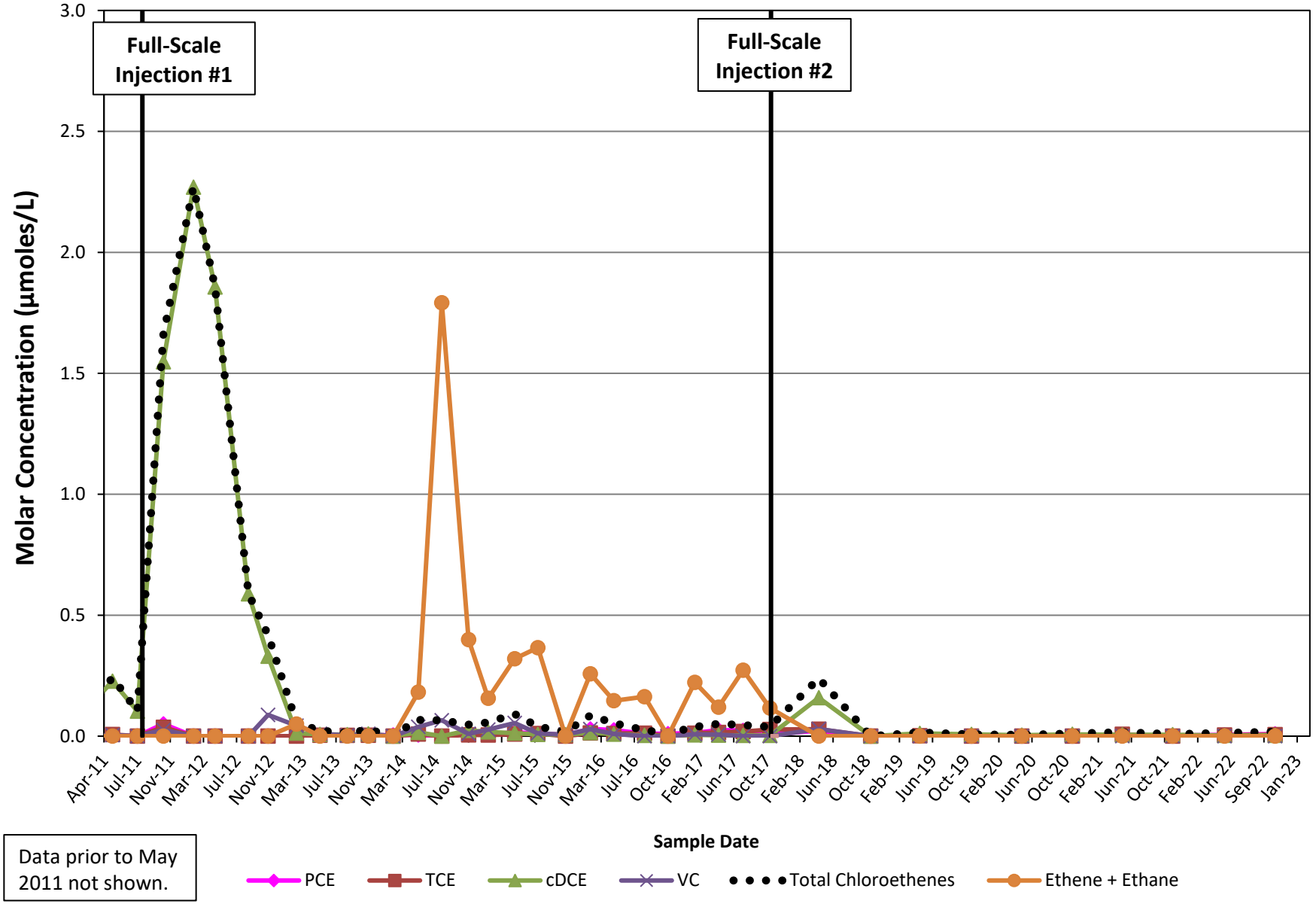
Tukwila, Washington

SWMU-17: VOCs at Source Zone Injection Well BDC-05-23

Figure
C-9

APPENDIX D

SWMU-17 Time Plots: Molar Concentrations of VOCs and Breakdown Products



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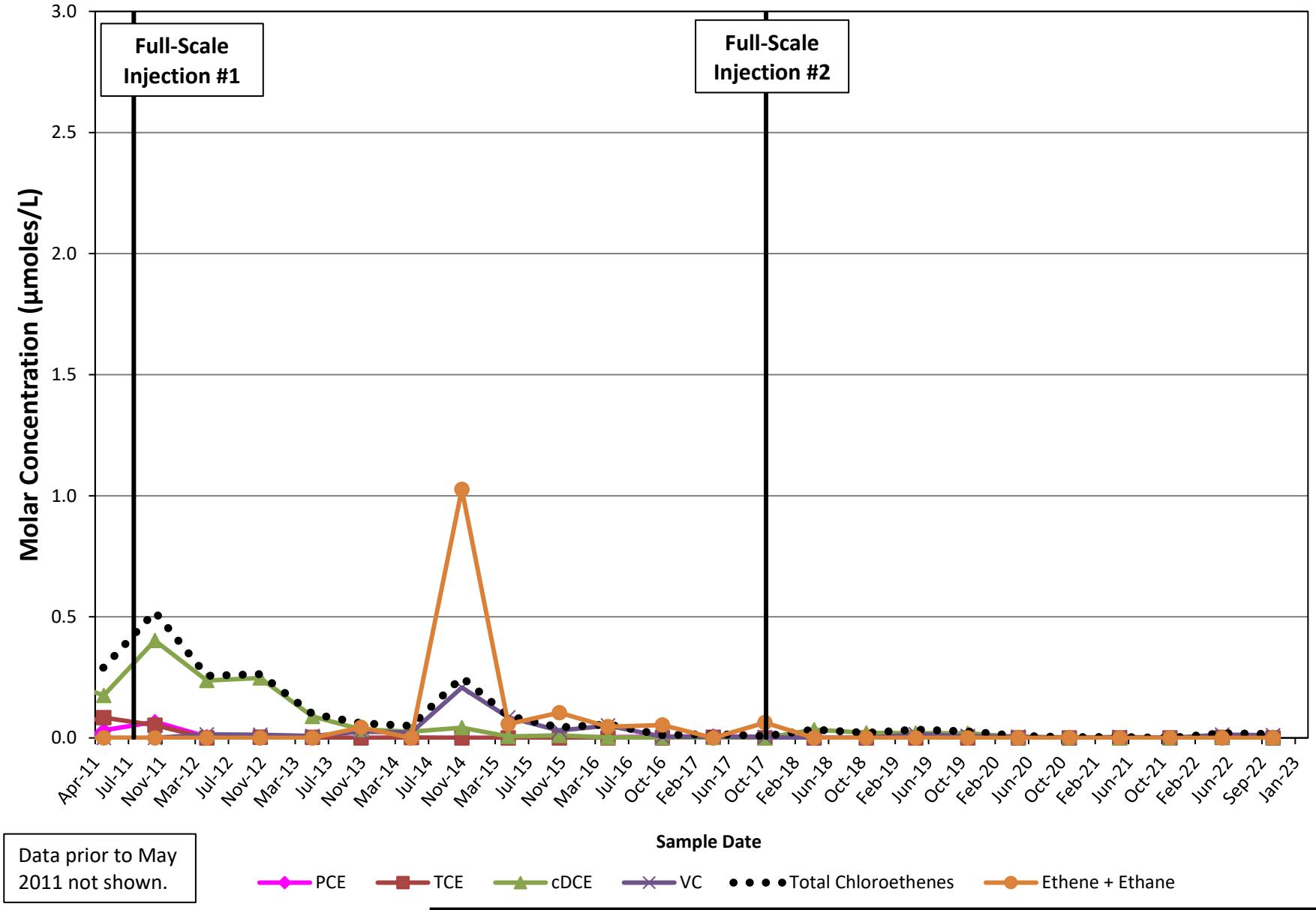
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-02

Figure
D-1



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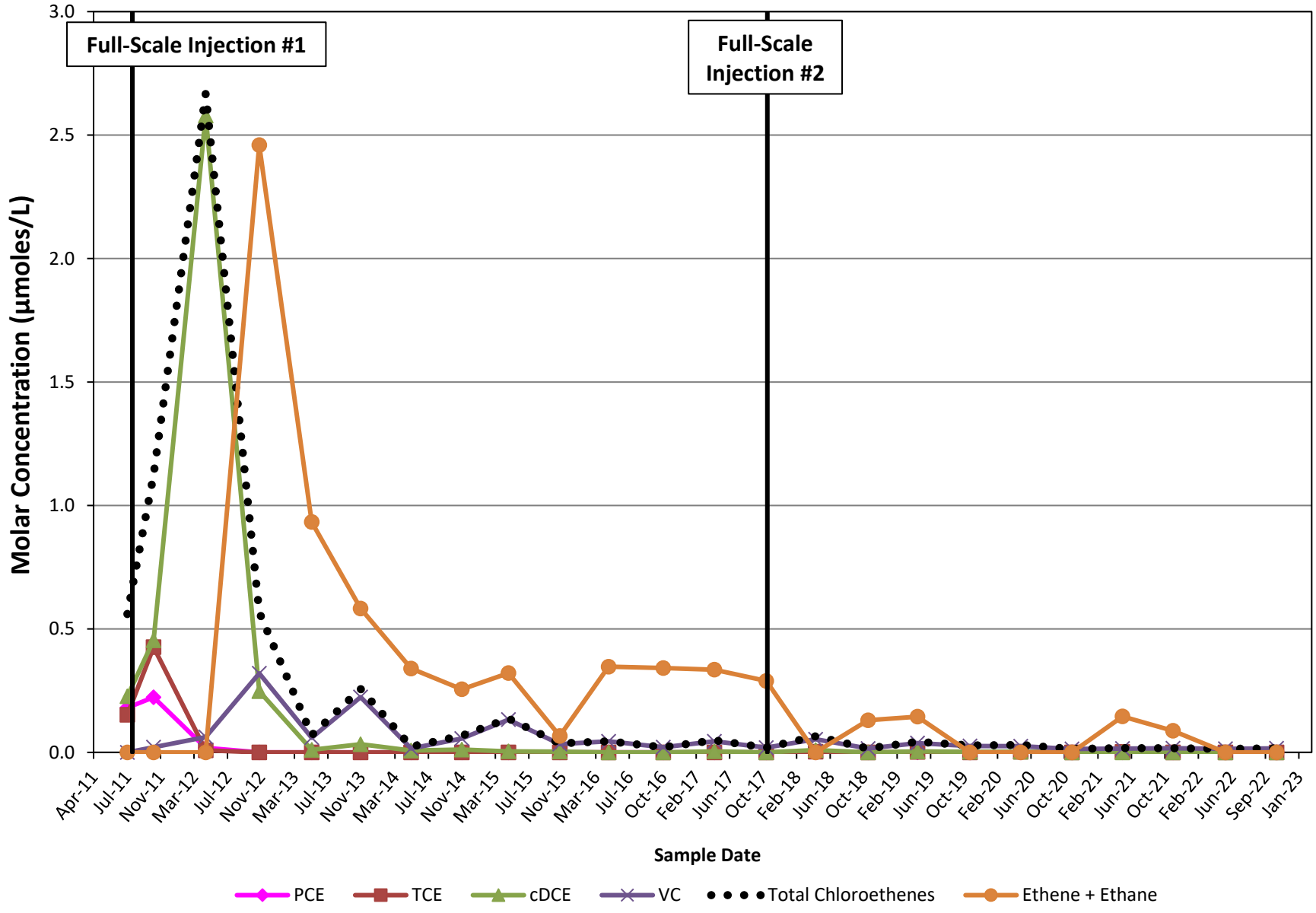
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-07

Figure
D-2



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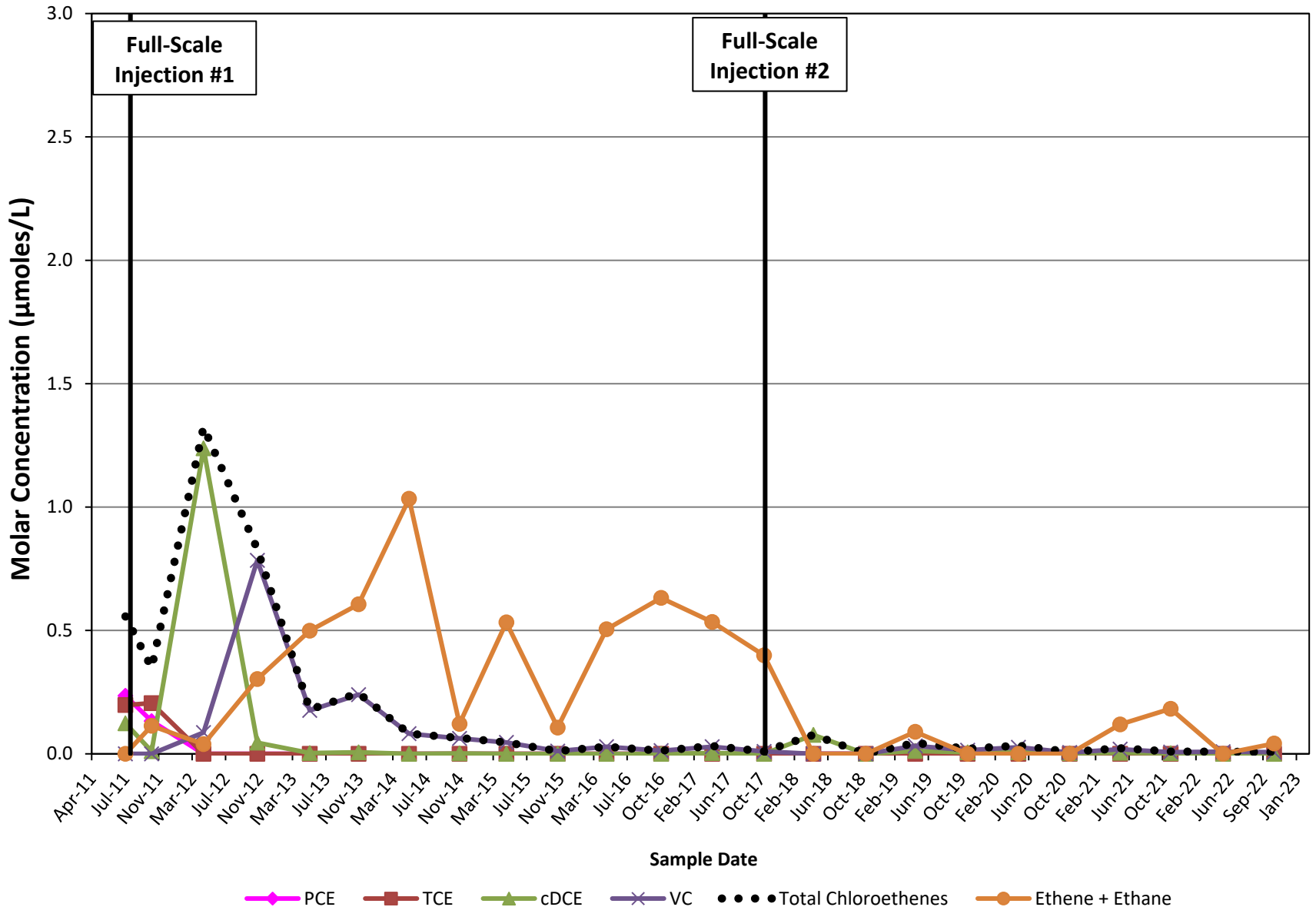
Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-09

Figure
D-3



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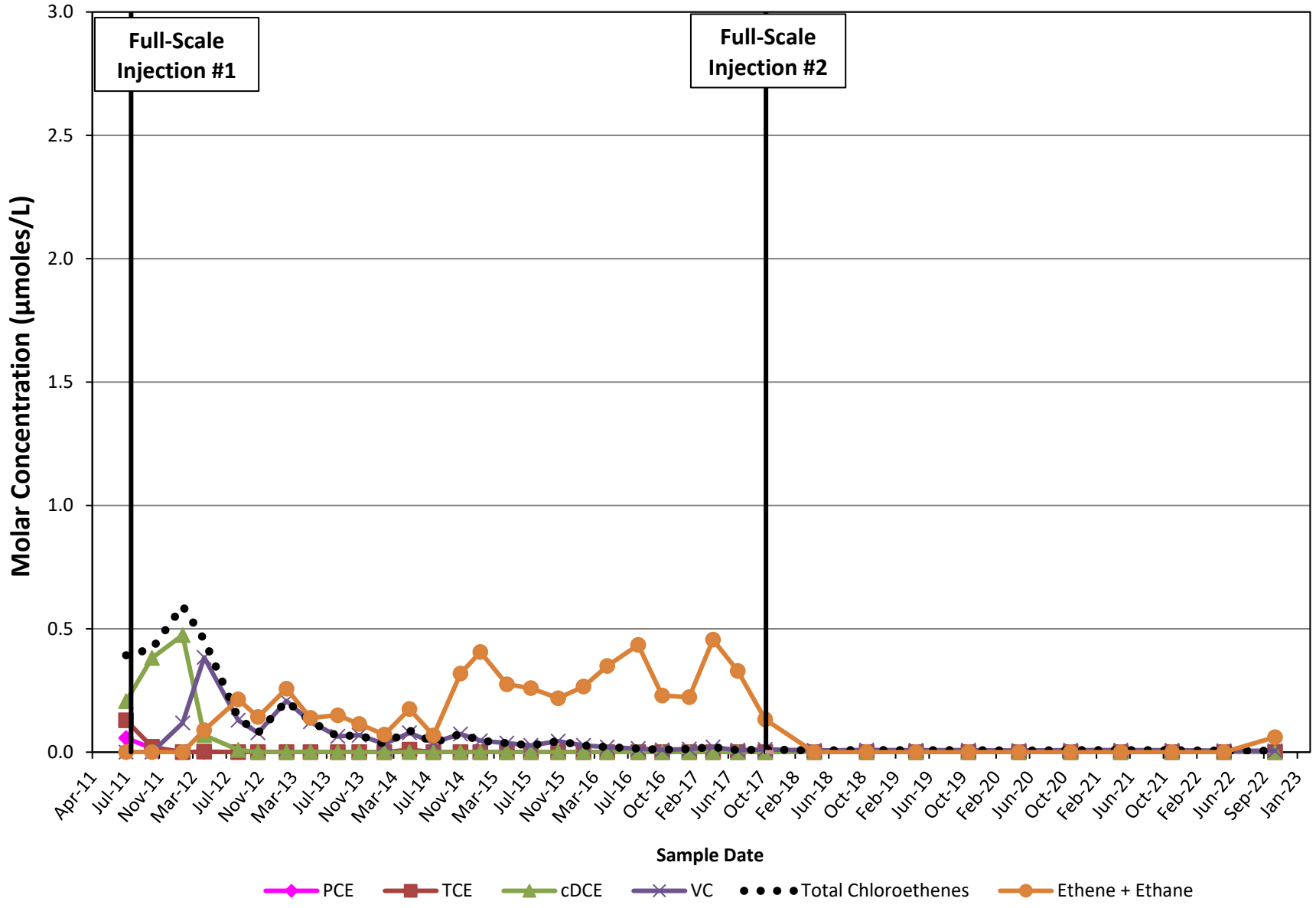
Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-10

Figure
D-4



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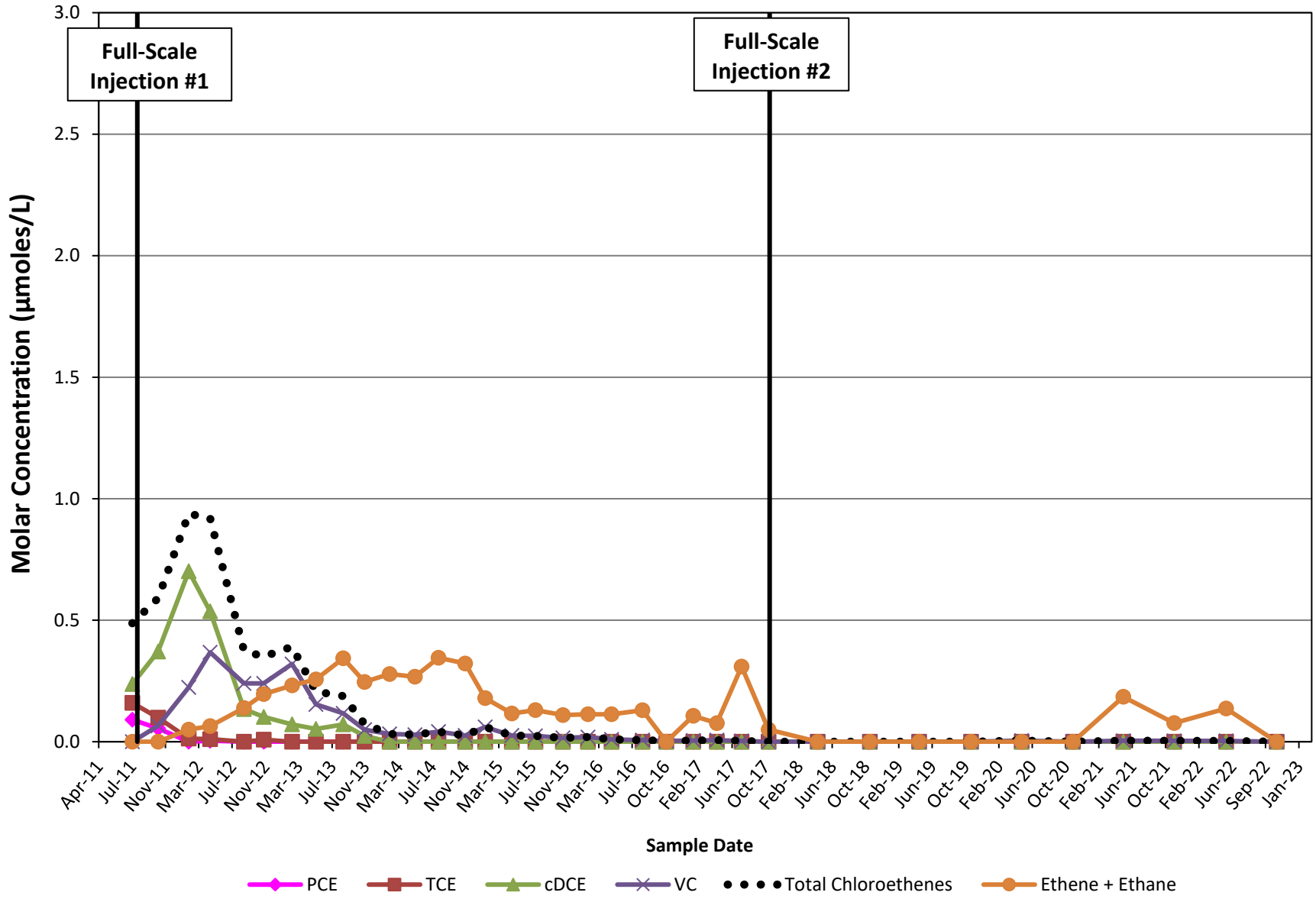
Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-16

Figure
D-5



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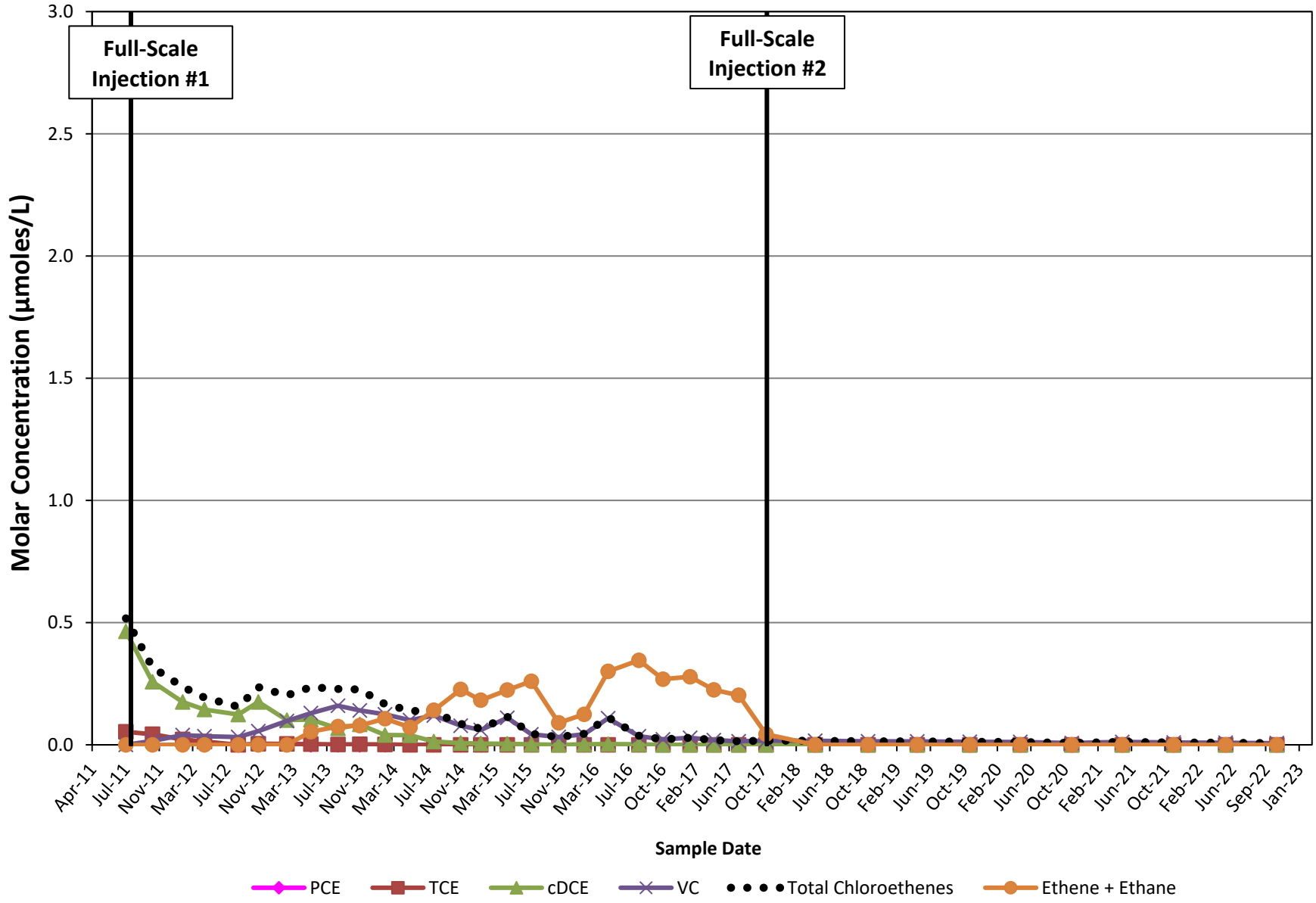
Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-19

Figure
D-6



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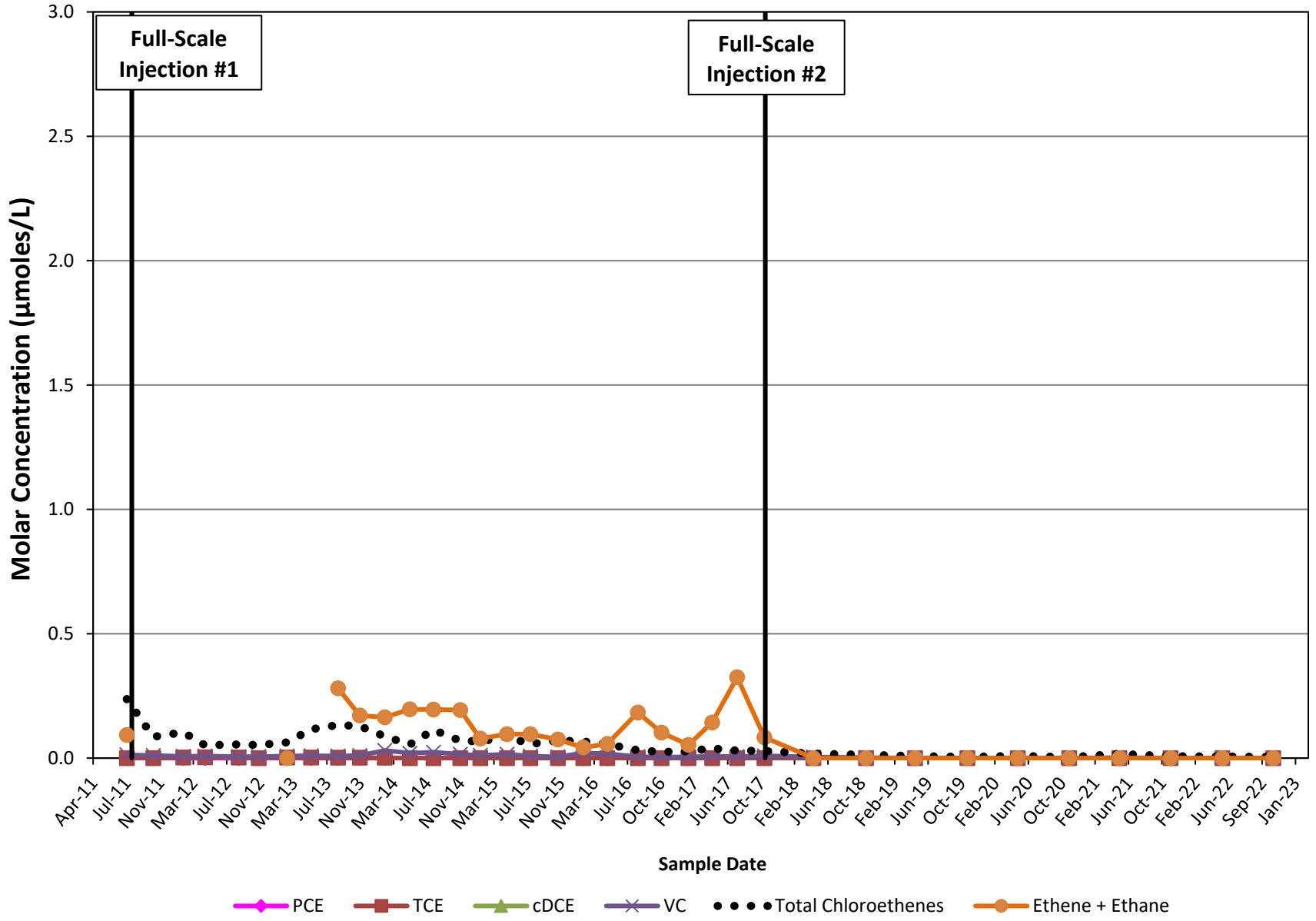
Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-20

Figure
D-7

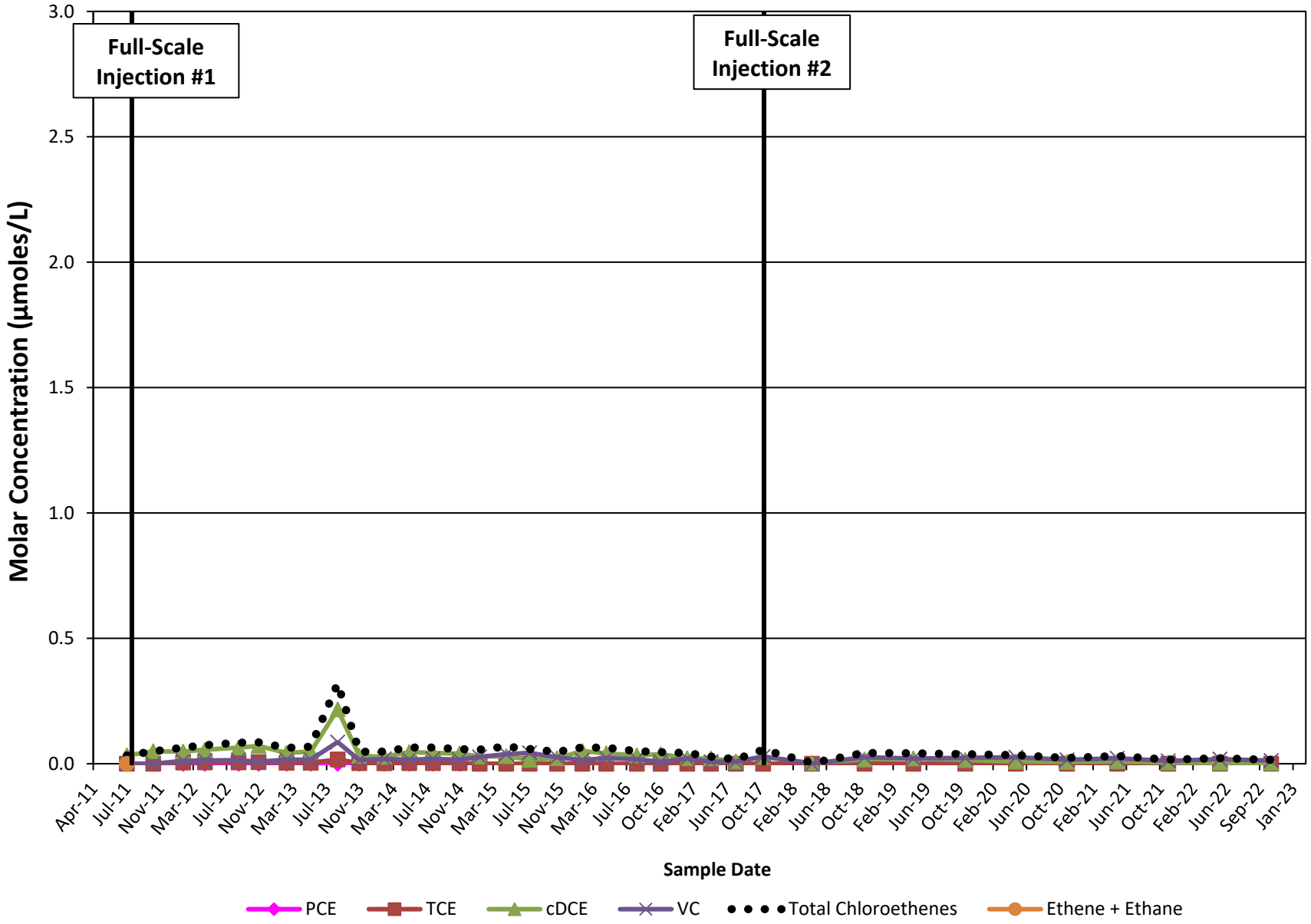


LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-21

Figure
D-8



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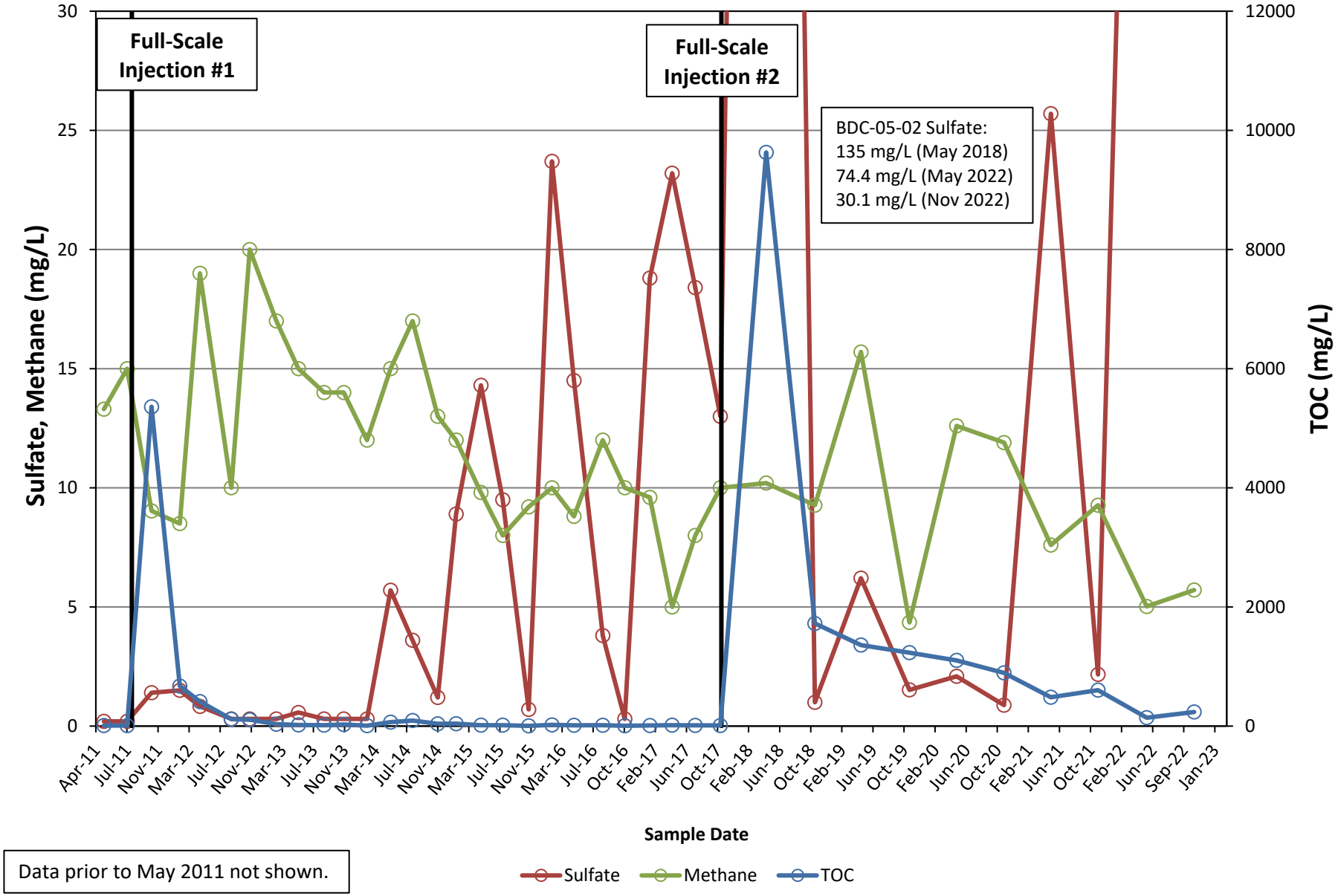
Tukwila, Washington

SWMU-17: VOC Molar Equivalents at Source Zone Injection Well BDC-05-23

Figure
D-9

APPENDIX E

SWMU-17 Time Plots: Redox Parameters and TOC



Data prior to May 2011 not shown.

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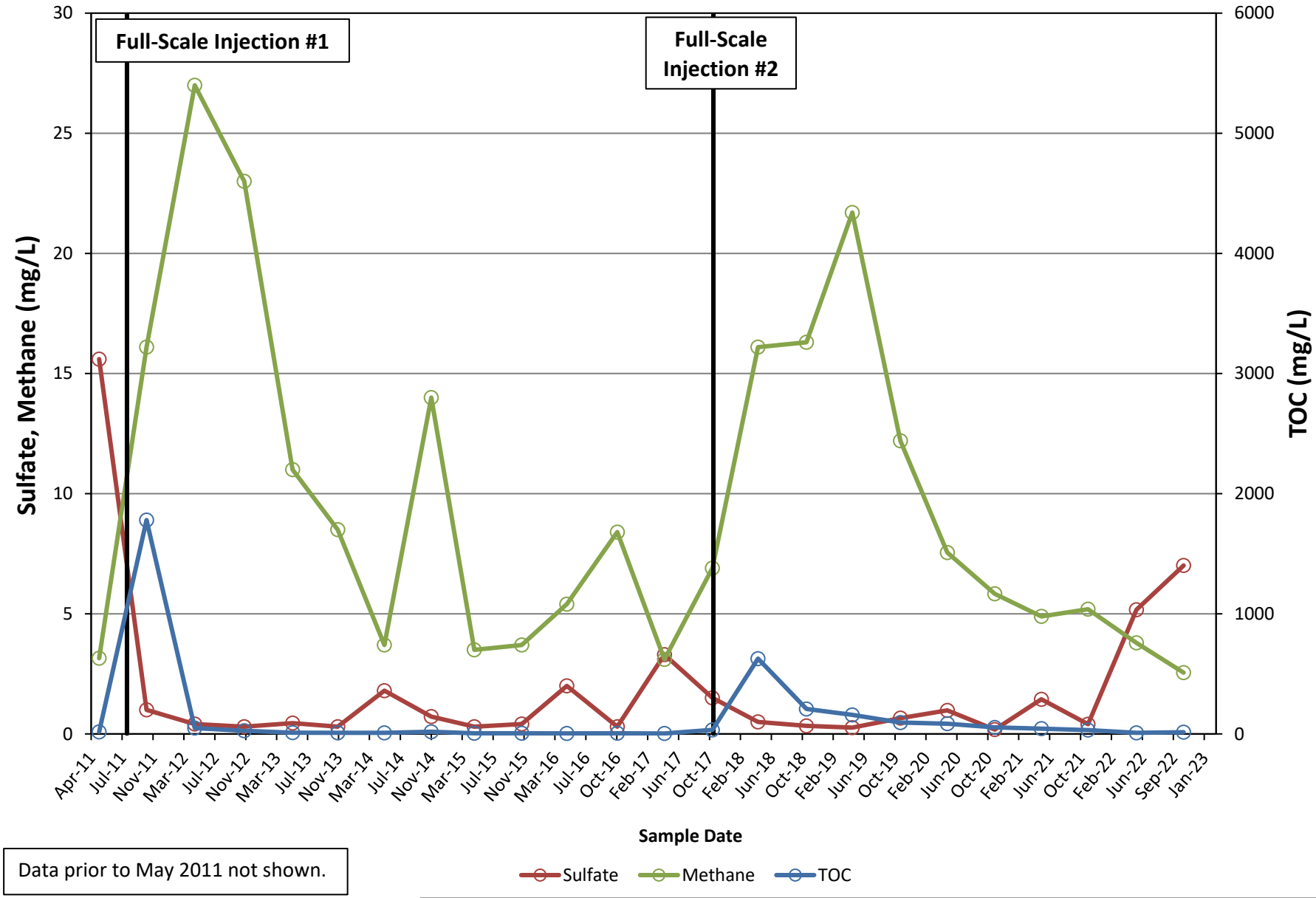
Tukwila, Washington

SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-02

Figure
E-1

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables



Data prior to May 2011 not shown.

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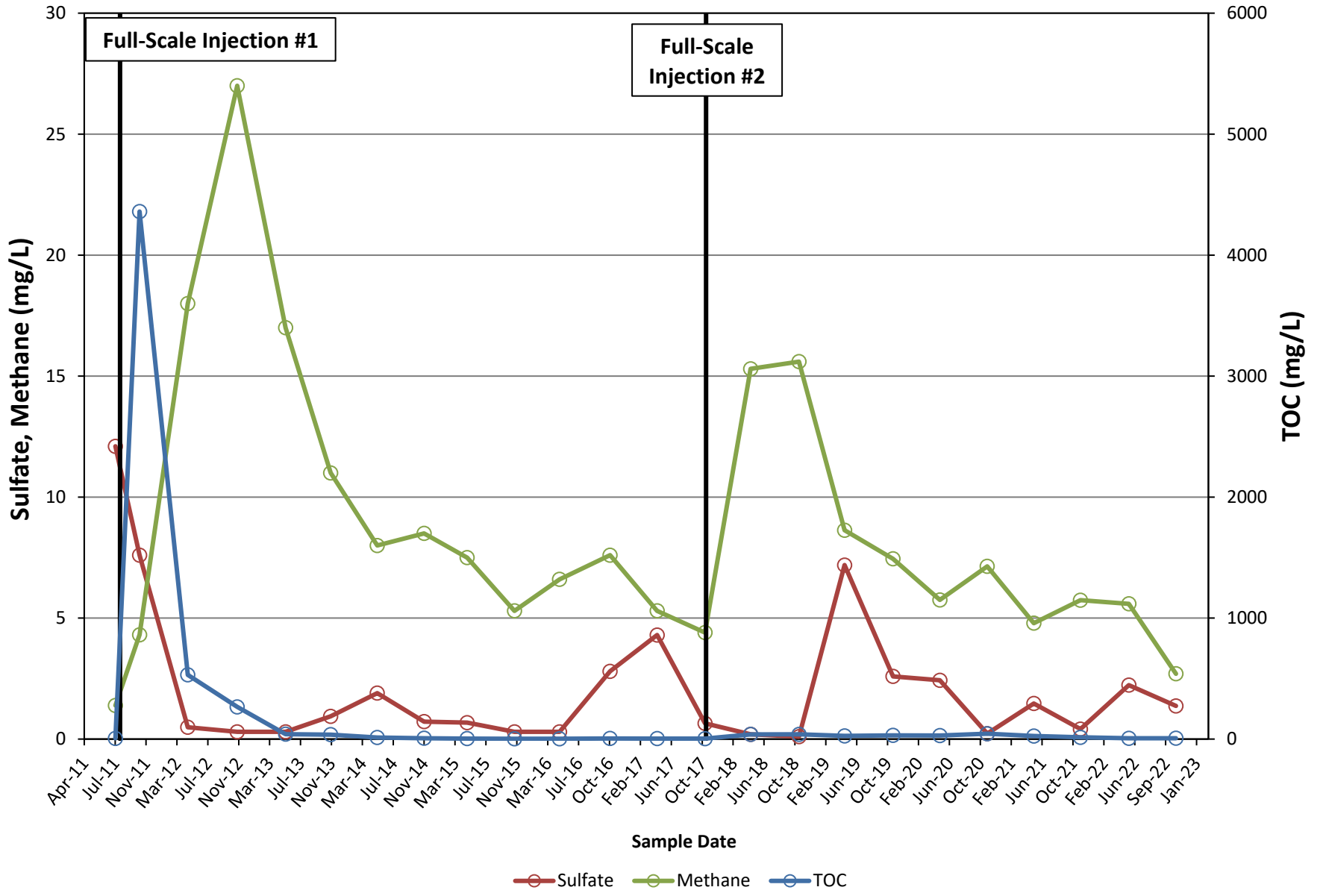
Tukwila, Washington

SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-07

Figure
E-2



Boeing Developmental Center Tukwila, Washington	**SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-09**	Figure **E-3**

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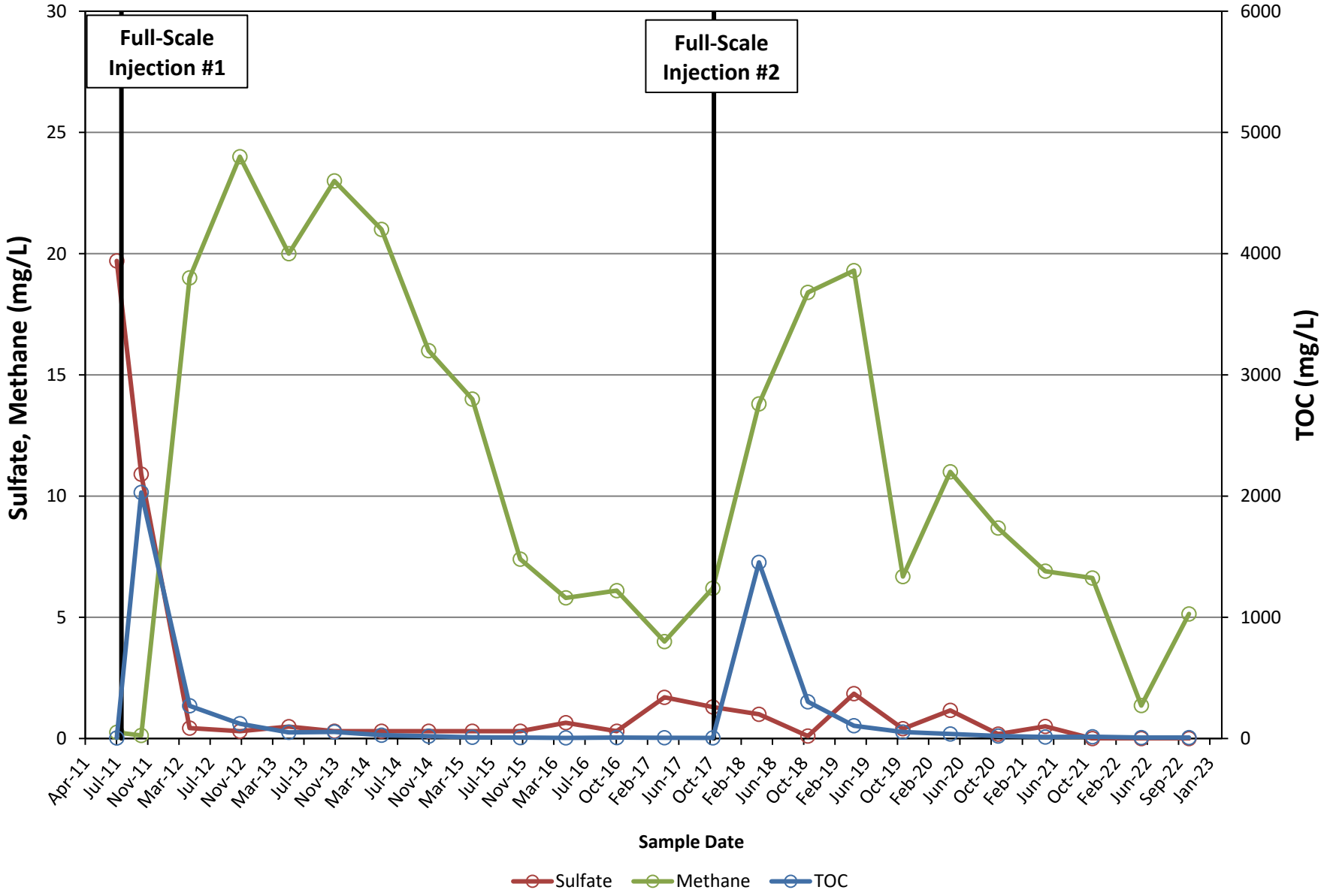

Boeing Developmental Center Tukwila, Washington	**SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-10**	Figure E-4

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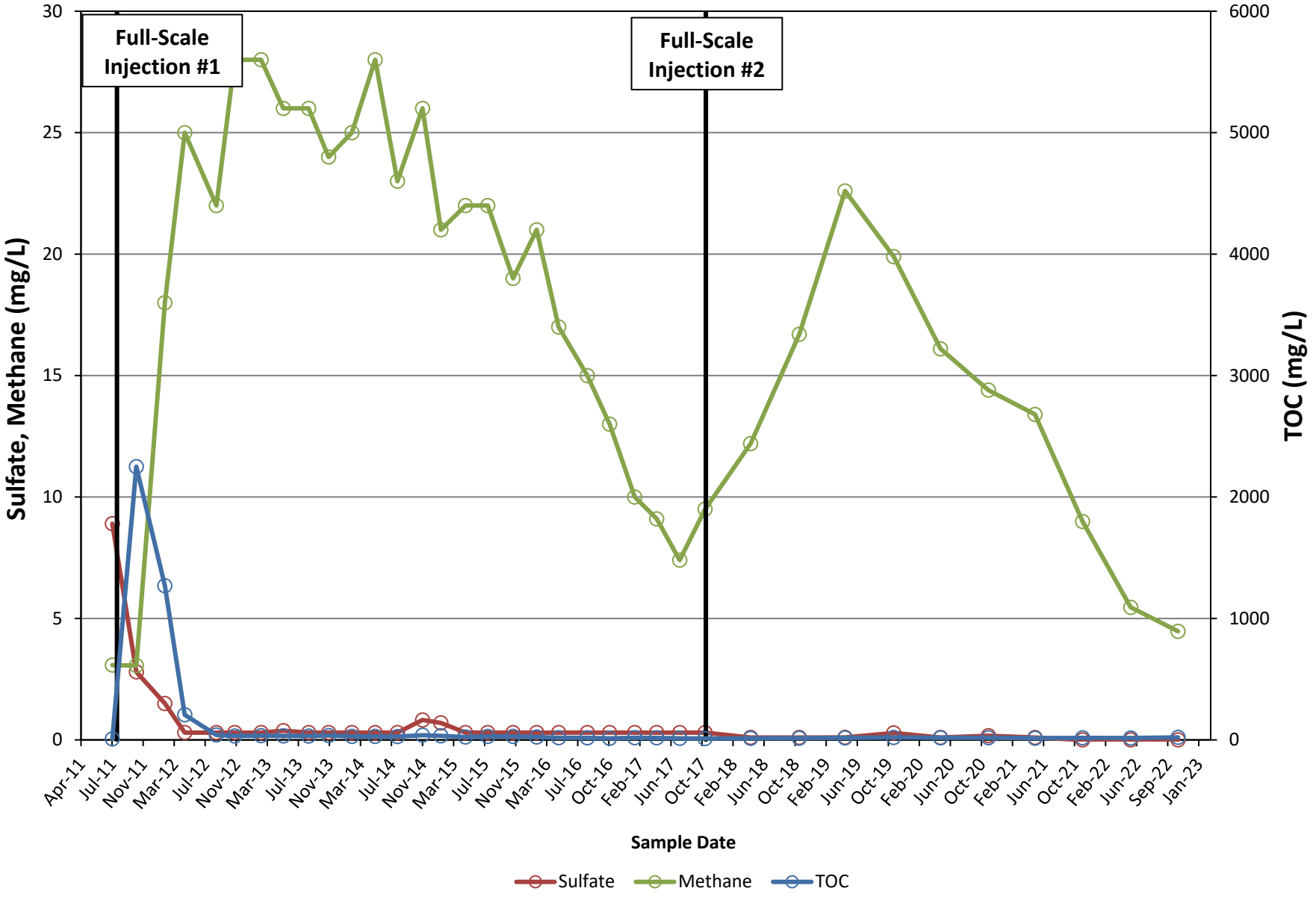

Boeing Developmental Center Tukwila, Washington	**SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-16**	Figure E-5

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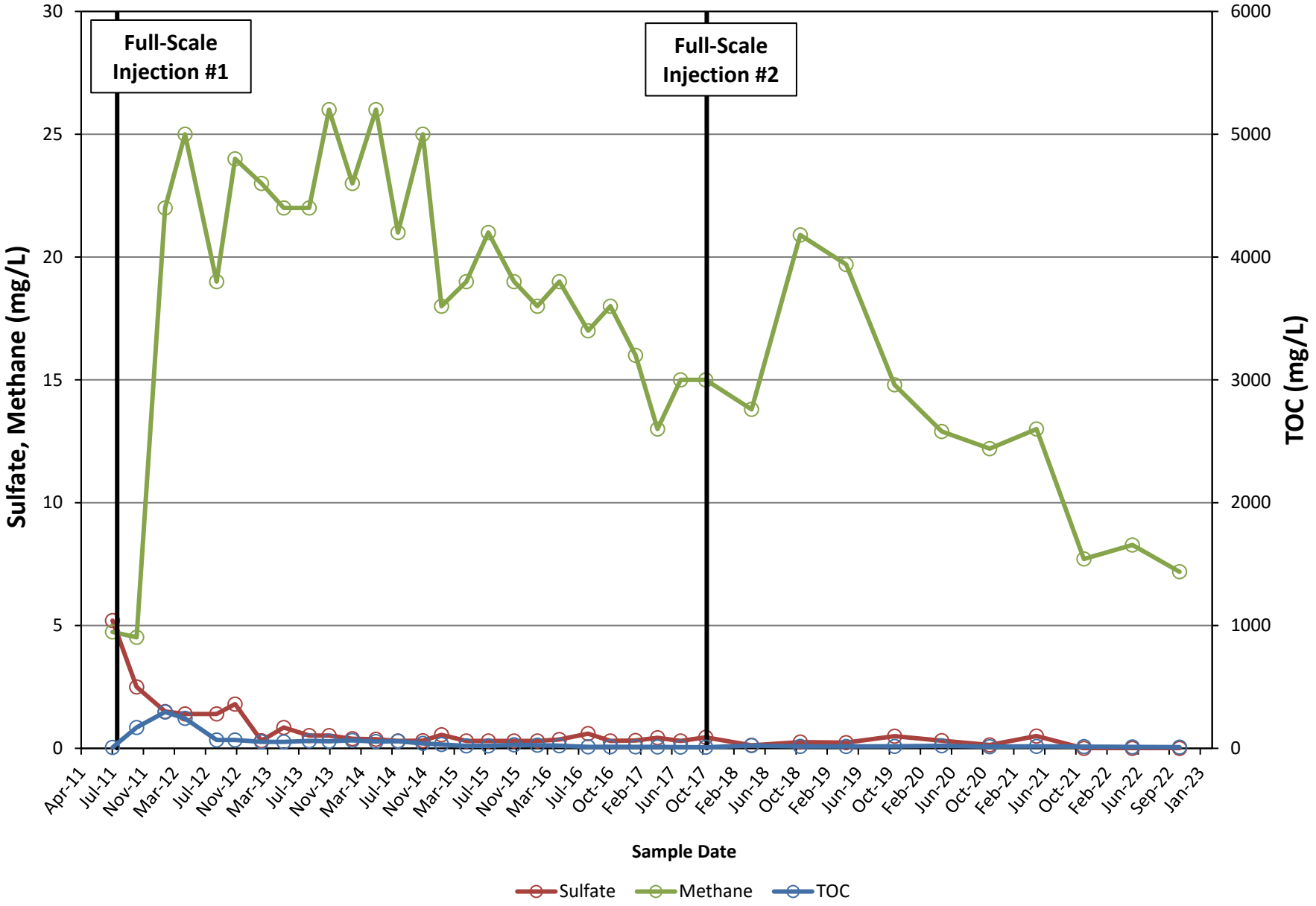
Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables



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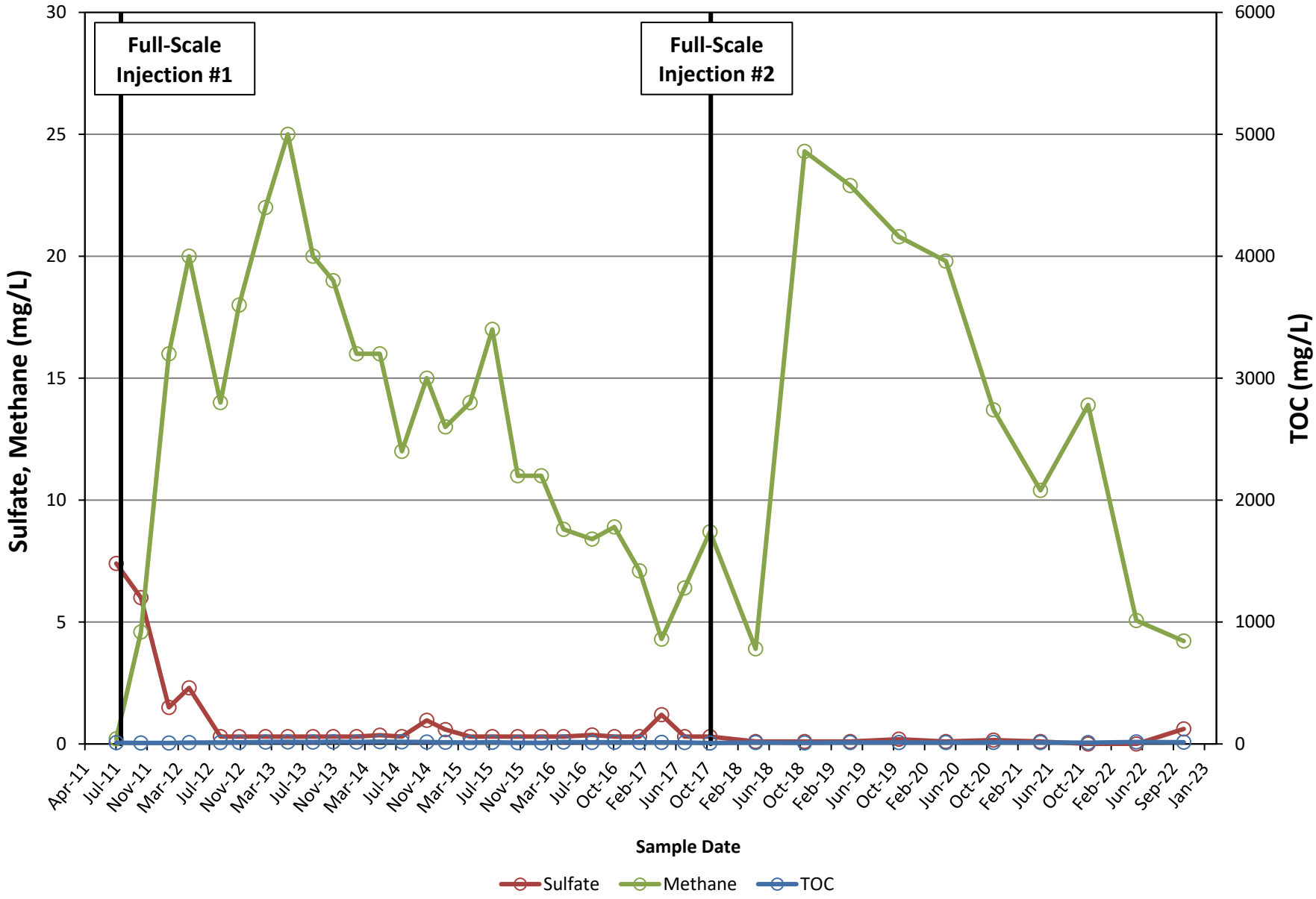
Boeing Developmental Center
Tukwila, Washington

SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-19

Figure
E-6

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables



Boeing Developmental Center Tukwila, Washington	**SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-20**	Figure **E-7**

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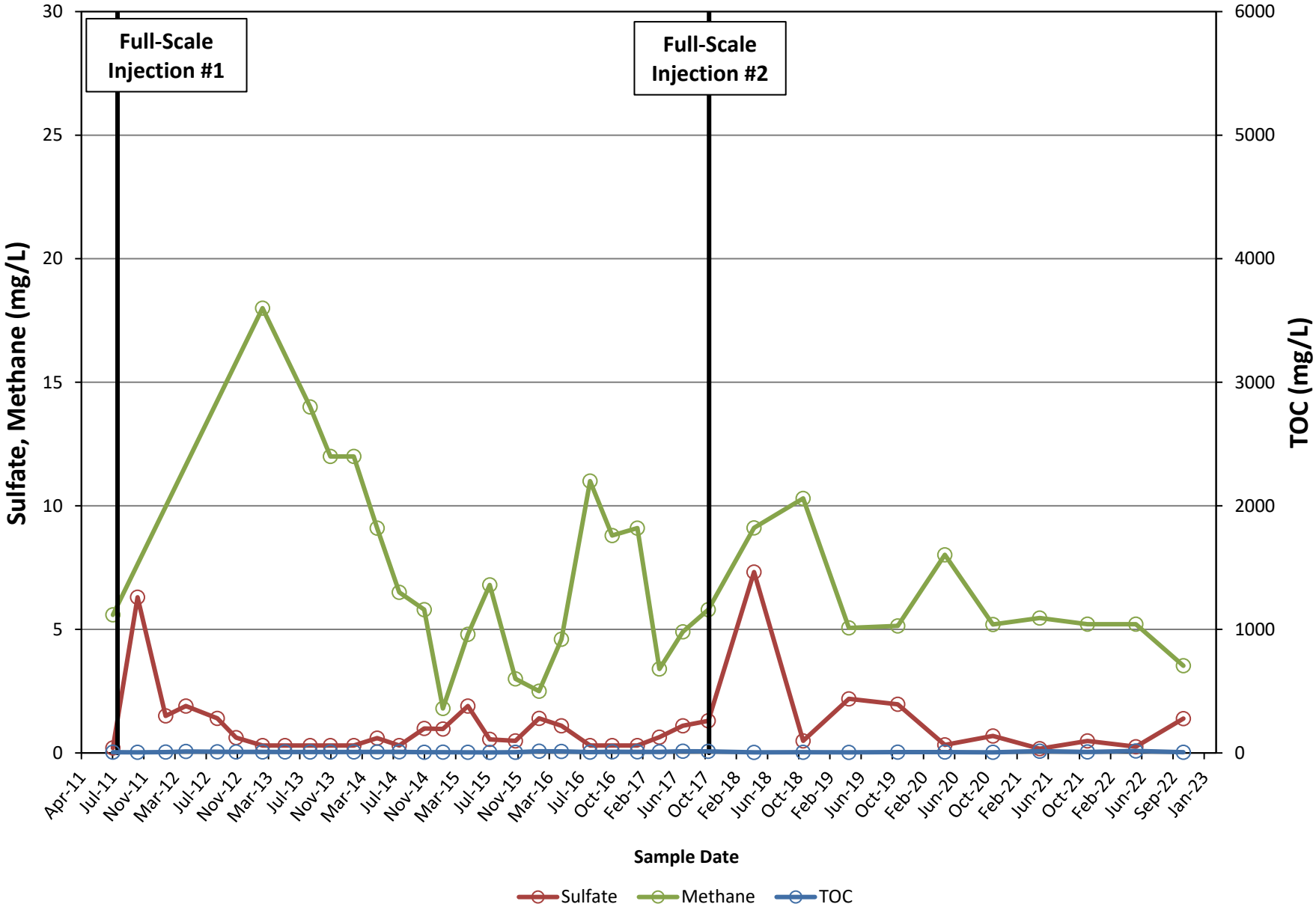

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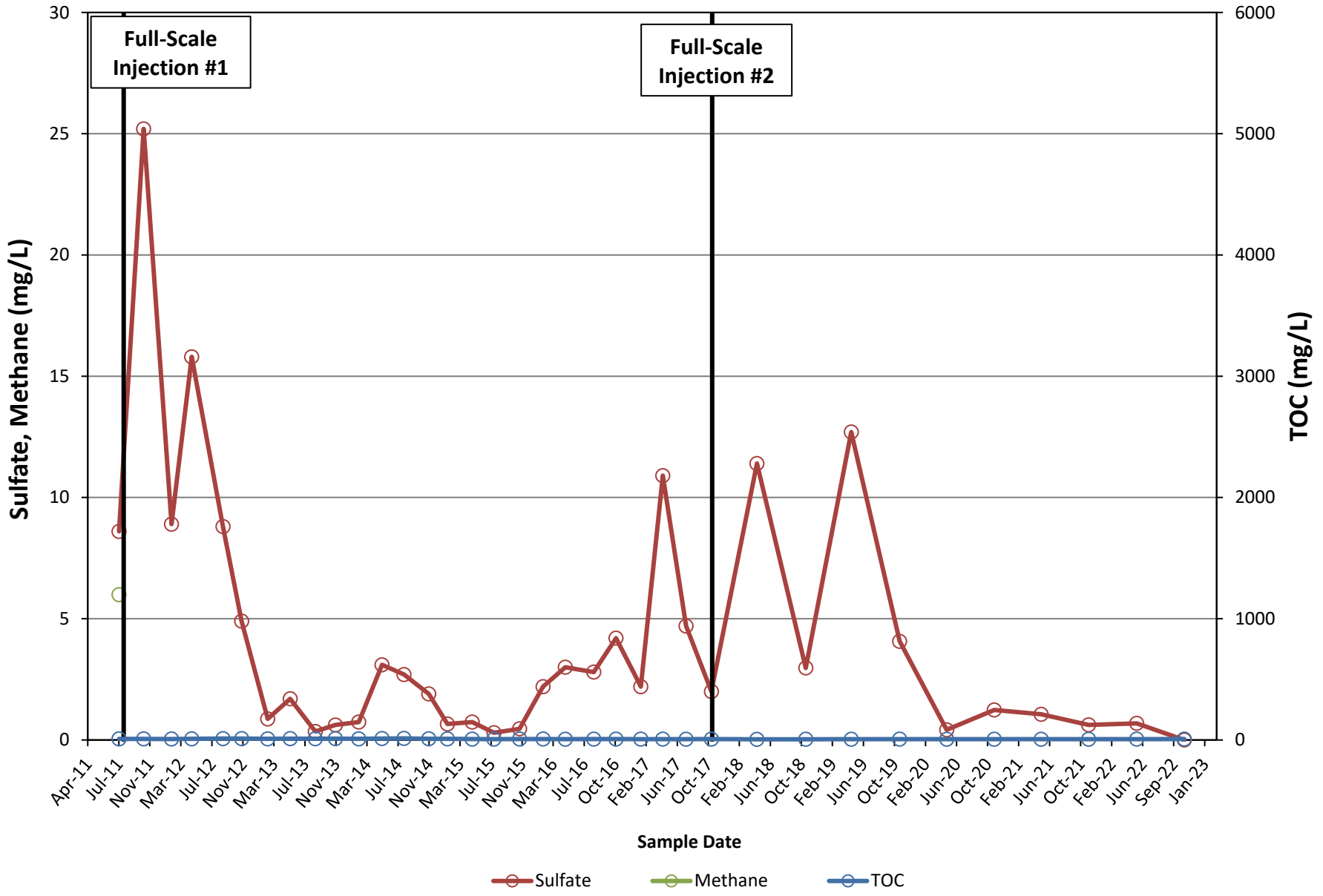
Boeing Developmental Center
Tukwila, Washington

SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-21

Figure
E-8



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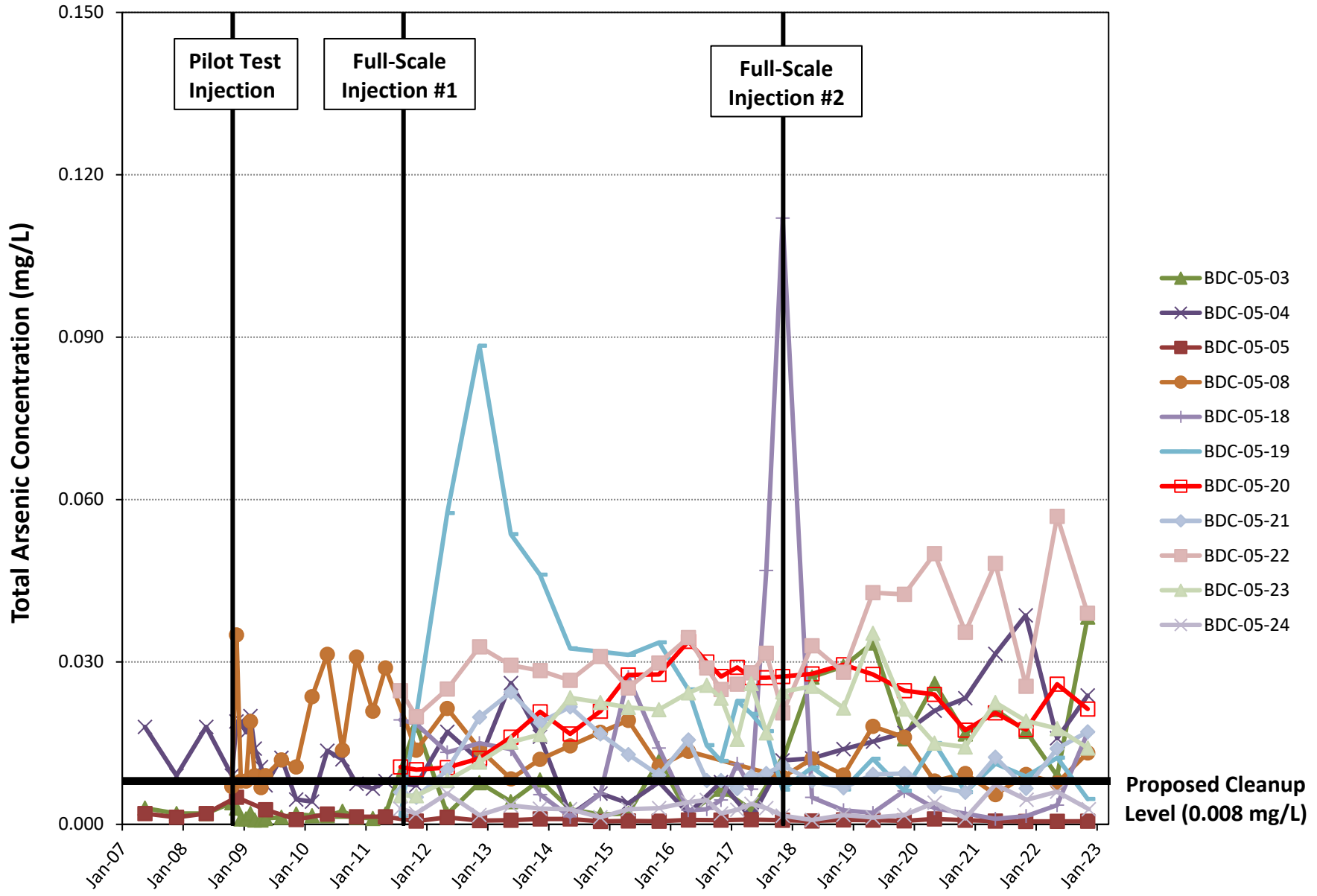
Boeing Developmental Center Tukwila, Washington	**SWMU-17: Redox and TOC at Source Zone Injection Well BDC-05-23**	Figure E-9

APPENDIX F

SWMU-17 Time Plots: Copper and Arsenic

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables



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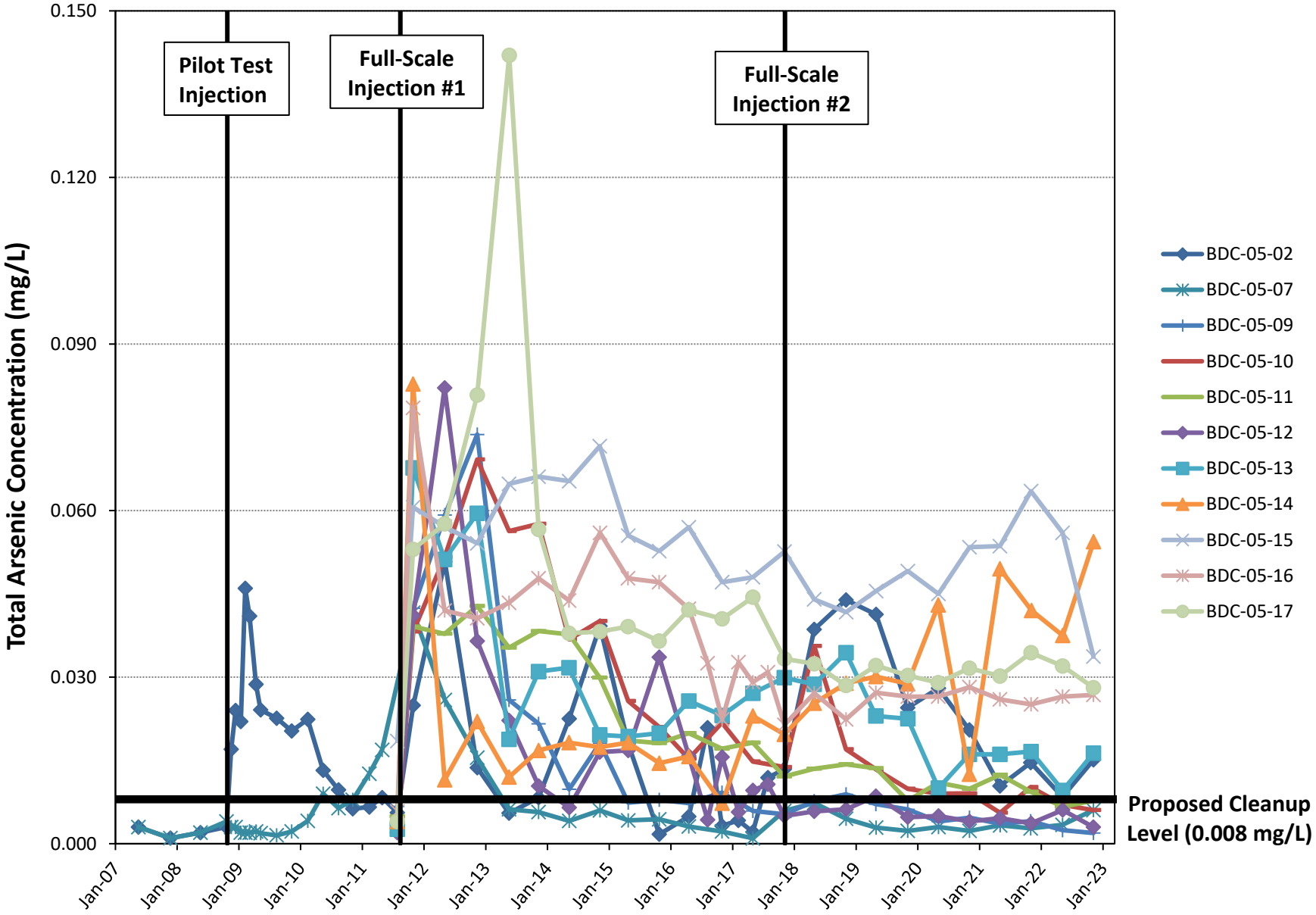
Tukwila, Washington

SWMU-17: Total Arsenic at Monitoring Wells

Figure
F-1

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables



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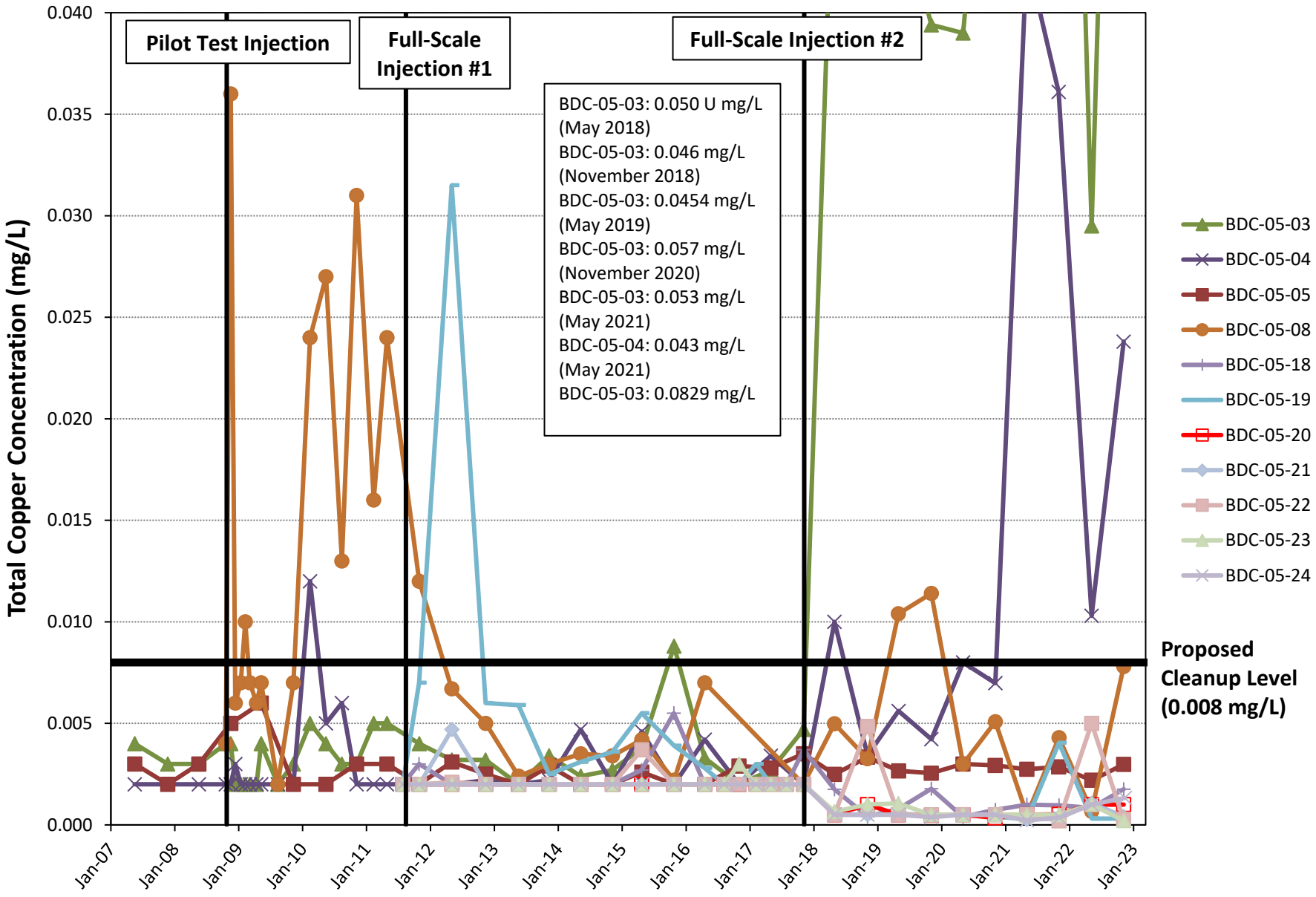
Tukwila, Washington

SWMU-17: Total Arsenic at Injection Wells

Figure
F-2

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables



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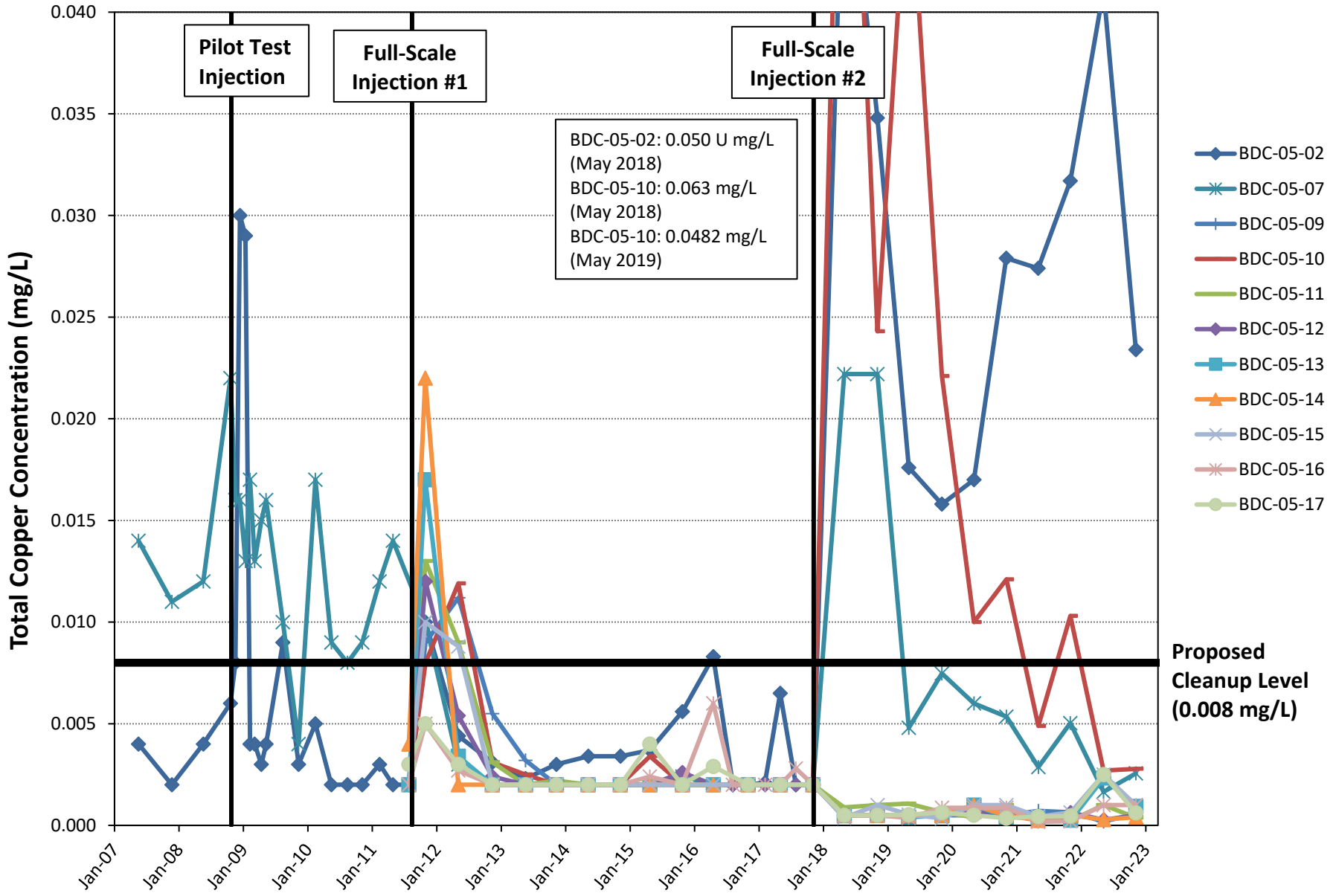
Boeing Developmental Center
Tukwila, Washington

SWMU-17: Total Copper at Monitoring Wells

Figure
F-3

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-17\SWMU-17 Summary Tables



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Boeing Developmental Center
Tukwila, Washington

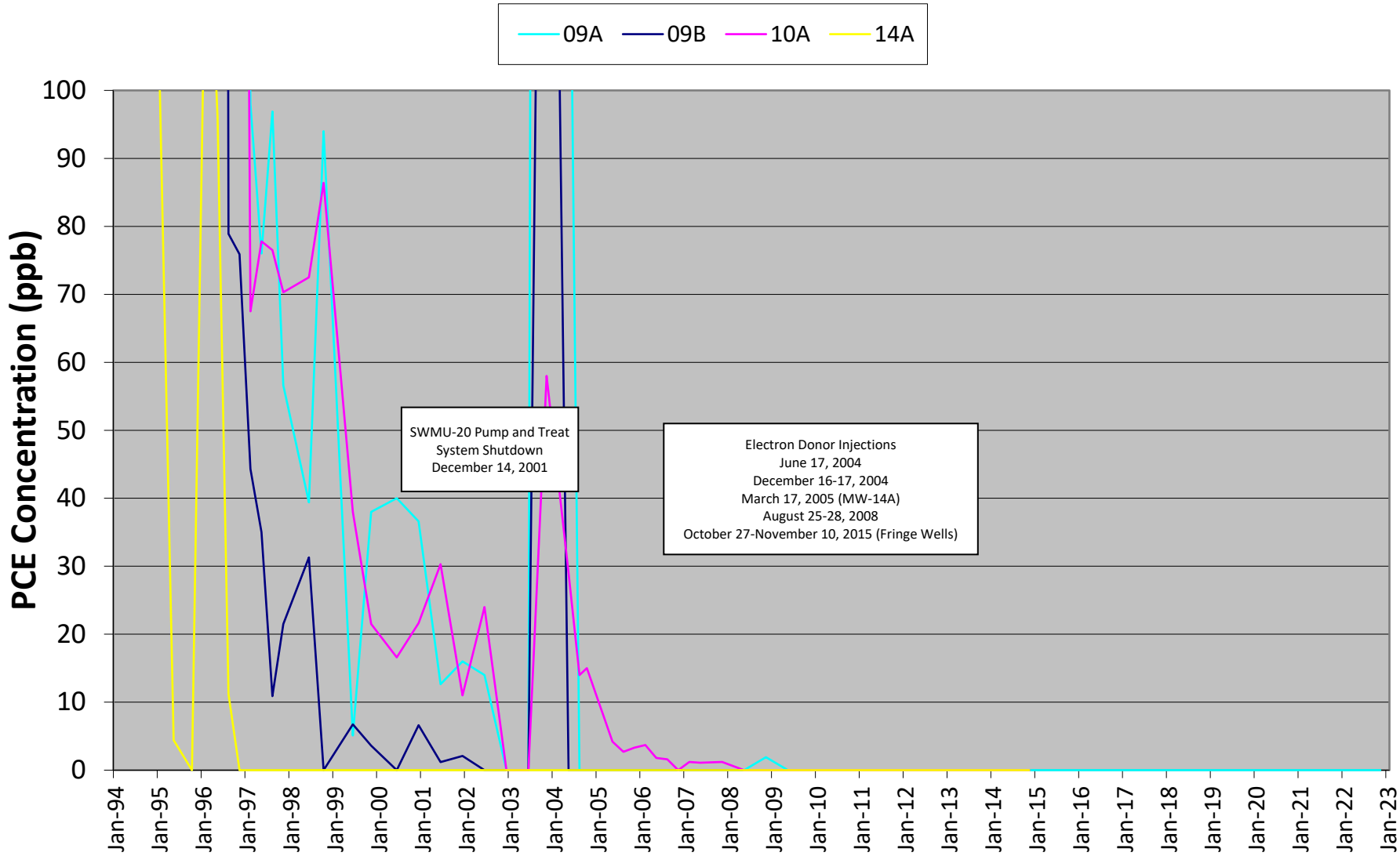
SWMU-17: Total Copper at Injection Wells

Figure
F-4

APPENDIX G

SWMU-20 Concentration Trend Charts

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



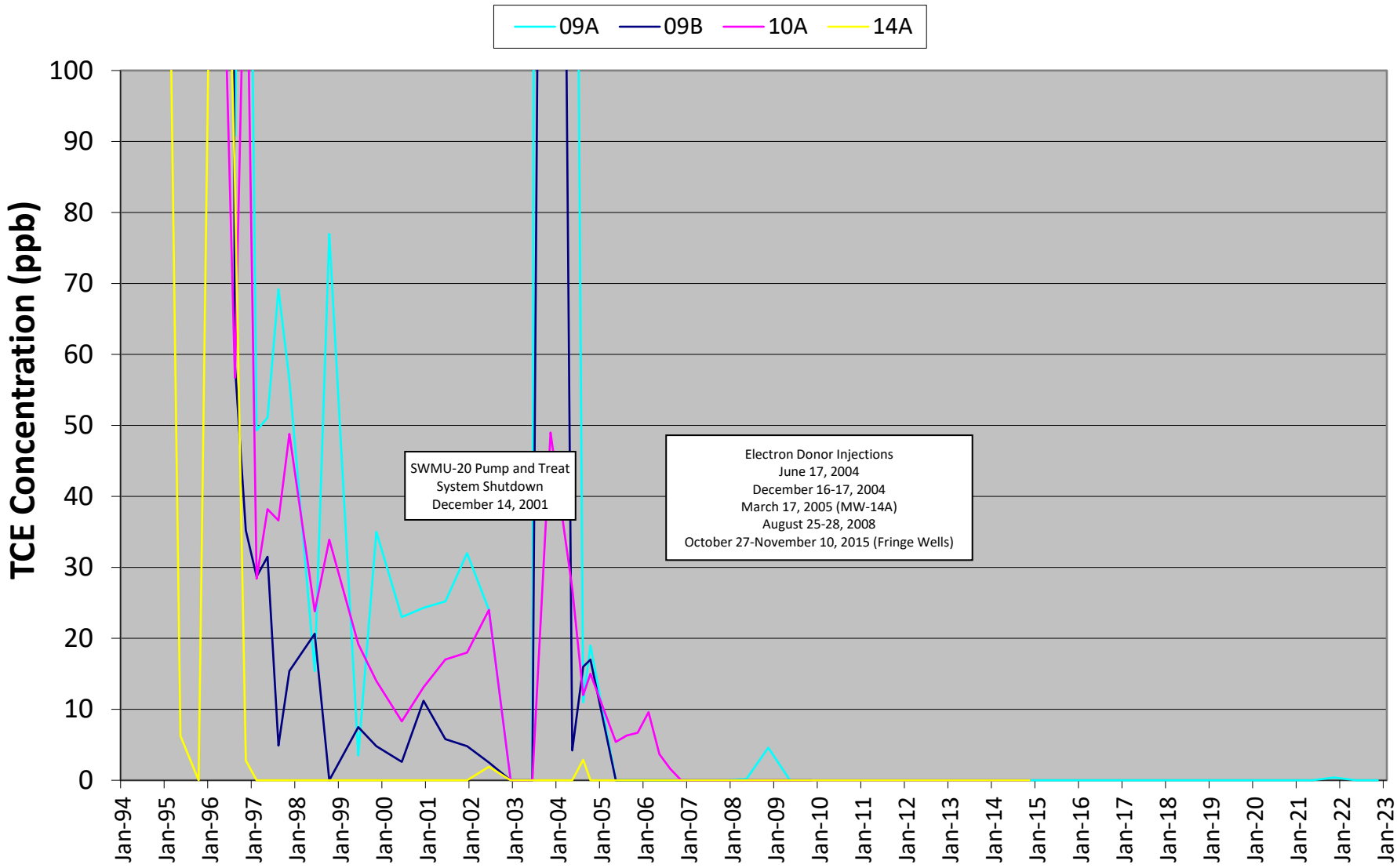
(Wells with PCE Historically Detected over 50 ppb)

January 1994 Through Present

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**SWMU-20: PCE Concentration Trend Chart**	Figure G-1

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



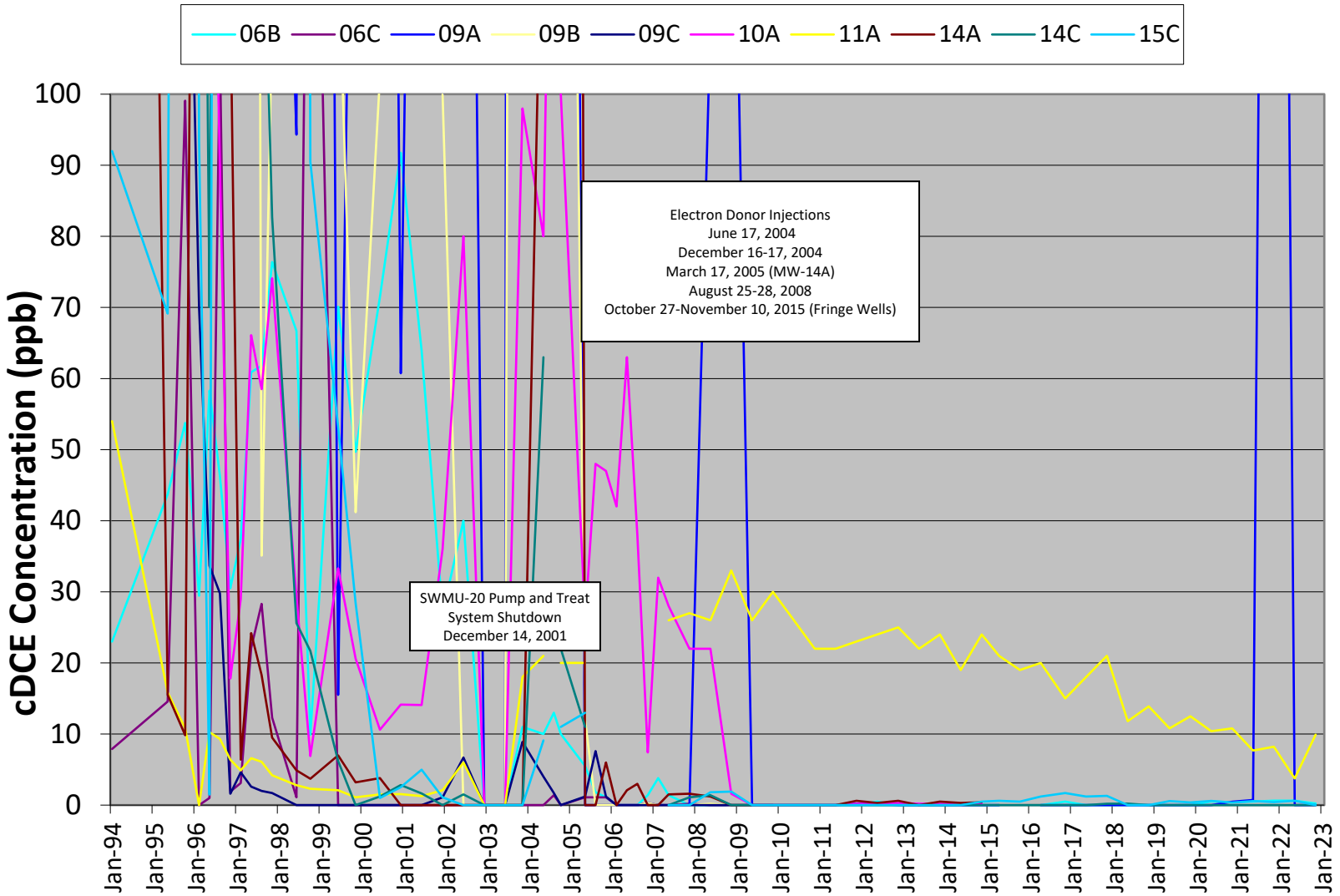
(Wells with TCE Historically Detected over 50 ppb)

January 1994 Through Present

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**SWMU-20: TCE Concentration Trend Chart**	Figure G-2

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



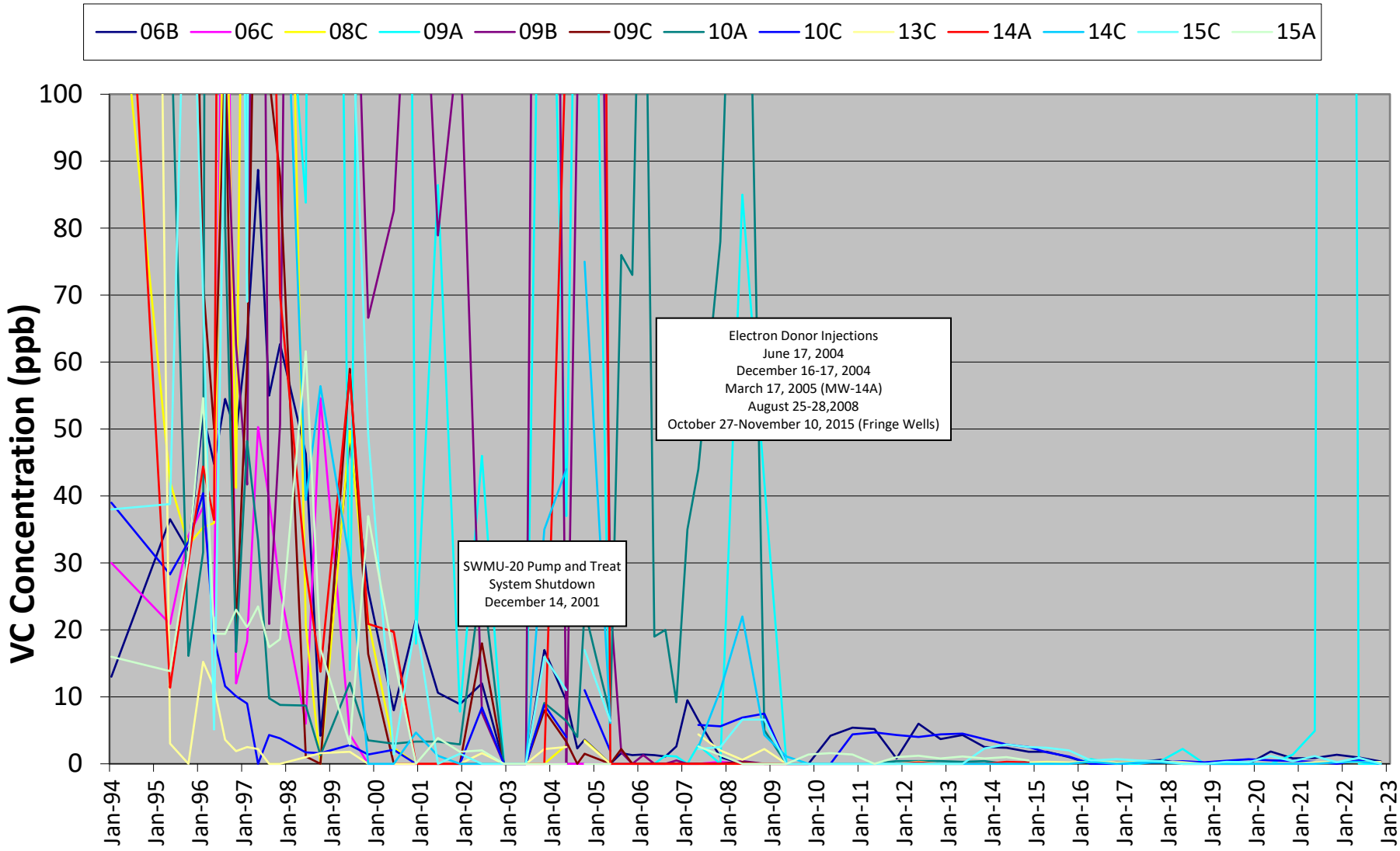
(Wells with cDCE Historically Detected over 50 ppb)

January 1994 Through Present

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**SWMU-20: cDCE Concentration Trend Chart**	Figure G-3

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



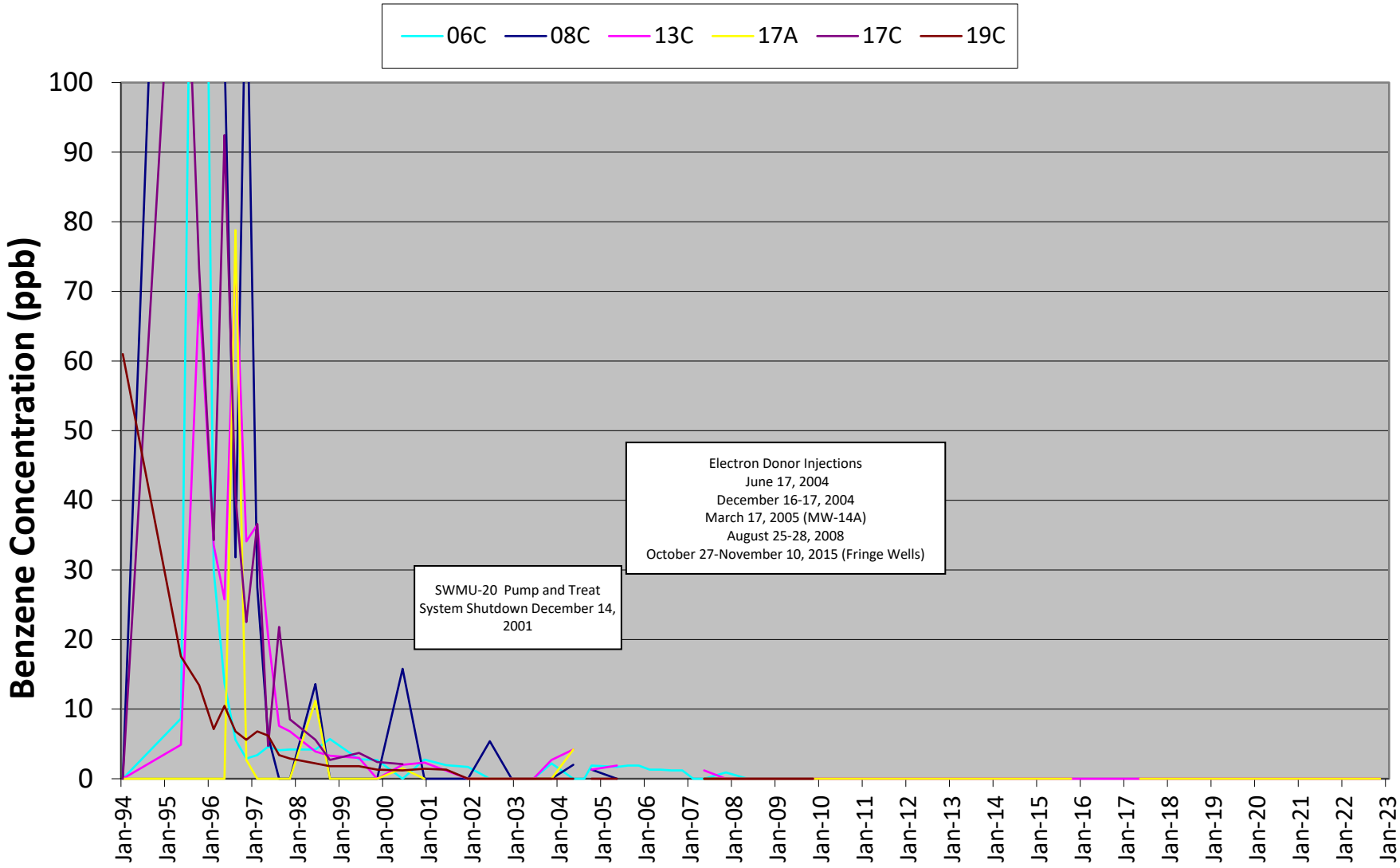
(Wells with VC Historically Detected over 50 ppb)

January 1994 Through Present

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**SWMU-20: VC Concentration Trend Chart**	Figure G-4

Source: P:\025\093\WIP\T\Data\ Master Data Tables\SWMU-20\SWMU-20 VOC Concentration Trend Charts.xlsx



(Wells with Benzene Historically Detected over 50 ppb)

January 1994 Through Present

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**SWMU-20: Benzene Concentration Trend Chart**	Figure G-5