LANDAU ASSOCIATES

June 21, 2016

Byung Maeng
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008-5452

Re: April 2016 Semiannual Groundwater Monitoring Report
Boeing Developmental Center, Tukwila, Washington

Dear Byung:

This letter and attached data constitute the semiannual letter report for groundwater monitoring at The Boeing Company Developmental Center in Tukwila, Washington. This report covers the period following the October 2015 semiannual sampling event through the semiannual event in April 2016. This report provides a brief summary of the data and remedial activities performed at the site during the reporting period. Remedial actions are underway in SWMU-20, SWMU-17, and Area of Concern (AOC)-05. All other SWMUs and AOCs identified in the 1994 RCRA Facility Assessment (RFA) have been excluded from further investigation based on determinations that they do not pose a threat to human health or the environment.

Groundwater monitoring during the reporting period was performed in April 2016 at SWMU-20 wells; and in January and April 2016 at SWMU-17 and AOC-05. Analytical data for SWMU-20, SWMU-17, and AOC-05 are enclosed for your review and include sample results, summary tables, and laboratory data packages. Summary figures, historical analytical summary data, and volatile organic compounds (VOCs) concentrations trend charts are provided for key constituents present in SWMU-20. A well location figure and tables of current data and cumulative data are provided for SWMU-17. Included for AOC-05 are a well location figure; cumulative tables for total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene, and xylenes (BTEX); and conventional parameters; as well as trend plots for TPH-Gasoline (TPH-G) and BTEX, and nitrate. Summary tables include proposed cleanup levels (CULs) from the May 7, 2013 *Proposed Cleanup Standards and Comparison to Site Data* document.

At SWMU-20, groundwater monitoring results indicate concentrations of tetrachloroethene (PCE), trichloroethene (TCE), and breakdown products are below the proposed CULs at all SWMU-20 monitoring wells, compared to three wells that exceeded CULs for TCE or VC in October 2015. *In situ* anaerobic bioremediation was enhanced by the October/November 2015 electron donor injection event, which delivered 49,000 gallons of electron donor solution to nine wells located on the fringes of the TCE source zone; the TCE source zone was treated by prior bioremediation injections. VOCs are monitored at each of the nine wells injected in 2015, with total organic carbon (TOC) and monitored

natural attenuation (MNA) parameters also monitored at three of the injected wells (MW-6A, MW-6B, MW-22A); as expected, TOC concentrations increased substantially at these three wells. The sulfate-reducing to methanogenic aquifer redox conditions, which have largely persisted in SWMU-20 following initial source zone injections, continued in April. At all source zone wells, PCE and TCE remain below reporting limits; cis-1,2-dichloroethene (cDCE) detections are less than or equal to 1 microgram per liter (μg/L), well below the proposed CUL (134 μg/L); and vinyl chloride (VC) detections are below the proposed CUL (2.4 μg/L). At the non-source zone wells, PCE, TCE, cDCE, and/or VC are present at all wells, but are below their respective proposed CULs. Ethene and/or ethane are detected at several of the source zone wells. Semiannual monitoring will continue in SWMU-20 to evaluate continued treatment, per the Ecology-approved monitoring reduction program that was implemented during the April 2015 sampling event.

At SWMU-17, groundwater monitoring results from January and April 2016 show that *in situ* anaerobic bioremediation continues to be enhanced following the only electron donor injection event, which was performed in August 2011. Increases in one or more breakdown or end products (cDCE, VC, and ethene) have been observed at all injection wells following injection. In April 2016, PCE, TCE, and cDCE concentrations are below proposed CULs at all wells except BDC-05-18 where the TCE concentration (3.0 μg/L) exceeds the proposed CUL (1.4 μg/L). Final breakdown product VC is present at three wells (BDC-05-07, BDC-05-09, and BDC-05-20) above the proposed CUL (2.4 μg/L) in April; concentrations for these three wells range from 2.8 to 6.8 μg/L. Complete reductive dechlorination beyond VC continues to be indicated by end products ethene and/or ethane, which are detected in April at 15 of 17 wells analyzed. Non-toxic end products ethene and ethane are predominant on a molar basis over TCE, cDCE, and VC at 14 of the 15 wells where detected. Low sulfate and elevated concentrations of methane persist at most wells, indicating a continuation of the highly reduced aquifer redox conditions required for complete dechlorination, despite decreasing TOC at injection wells (now ranging from 3 to 29 mg/L). Quarterly and semiannual monitoring will continue for evaluation of treatment progress. Additional donor injection within SWMU-17 is not necessary at this time.

At AOC-05, *in situ* anaerobic bioremediation continues for treatment of TPH-G and BTEX. The tenth injection of nitrate electron acceptor solution took place (at well BDC-103 only) in March 2016, 21 days before the April 2016 sampling event. At downgradient wells BDC-101 and BDC-102, and at source well BDC-104, TPH-G and BTEX remain below reporting limits. At BDC-103 in April 2016, concentrations of TPH-G, benzene, toluene, and ethylbenzene are below their respective reporting limits; while total xylenes are detected (2.0 μg/L) far below their proposed CUL (1,546 μg/L). As expected due to the recent injection, nitrate at BDC-103 (102 mg/L) in April is adequate for continued biotreatment. Nitrate monitoring is also performed at the two nearest downgradient wells and at four wells located farther downgradient. Nitrate concentrations are above the 10 mg/L action level at downgradient wells BDC-101 and BDC-102 in April. Nitrate continues to be below the action level at the four wells farther downgradient (BDC-05-04, MW-17A, MW-18A, and MW-21A). Groundwater

sampling at AOC-05 wells will continue on a quarterly basis to support evaluation of potential contaminant rebound and the need for potential future nitrate injections. As required, semiannual monitoring for nitrate at the four wells farther downgradient will also continue until nitrate remains below 10 mg/L for two consecutive semiannual events at downgradient wells BDC-101 and BDC-102.

Please call or email me if you have any questions or if you would like to discuss any of the sampling results in more detail.

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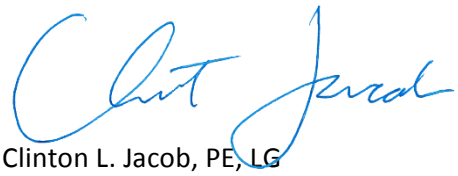

Clinton L. Jacob, PE, LG
Principal Engineer

CLJ/tam
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Enclosures: Developmental Center Groundwater Monitoring – April 2016
SWMU-20 Data Tables, Maps, and Trend Charts
SWMU-17 Data Tables and Map
AOC-05 Data Table, Trend Charts, and Map
Groundwater Elevation Table
Groundwater Sample Collection Forms and Analytical Data (DVD)

cc: James Bet, Boeing EHS Remediation (elec. w/o data)
Susanne McIlveen, Boeing Defense and Space, EHS Manager (elec. w/o data)
Jolene Brokenshire, Boeing Defense and Space, EHS (elec. w/o data)

DEVELOPMENTAL CENTER

GROUNDWATER MONITORING

APRIL 2016

DEVELOPMENTAL CENTER

GROUNDWATER MONITORING

APRIL 2016

SWMU-20 VOC/CONVENTIONALS DATA TABLES

SWMU-20 SUMMARY DATA

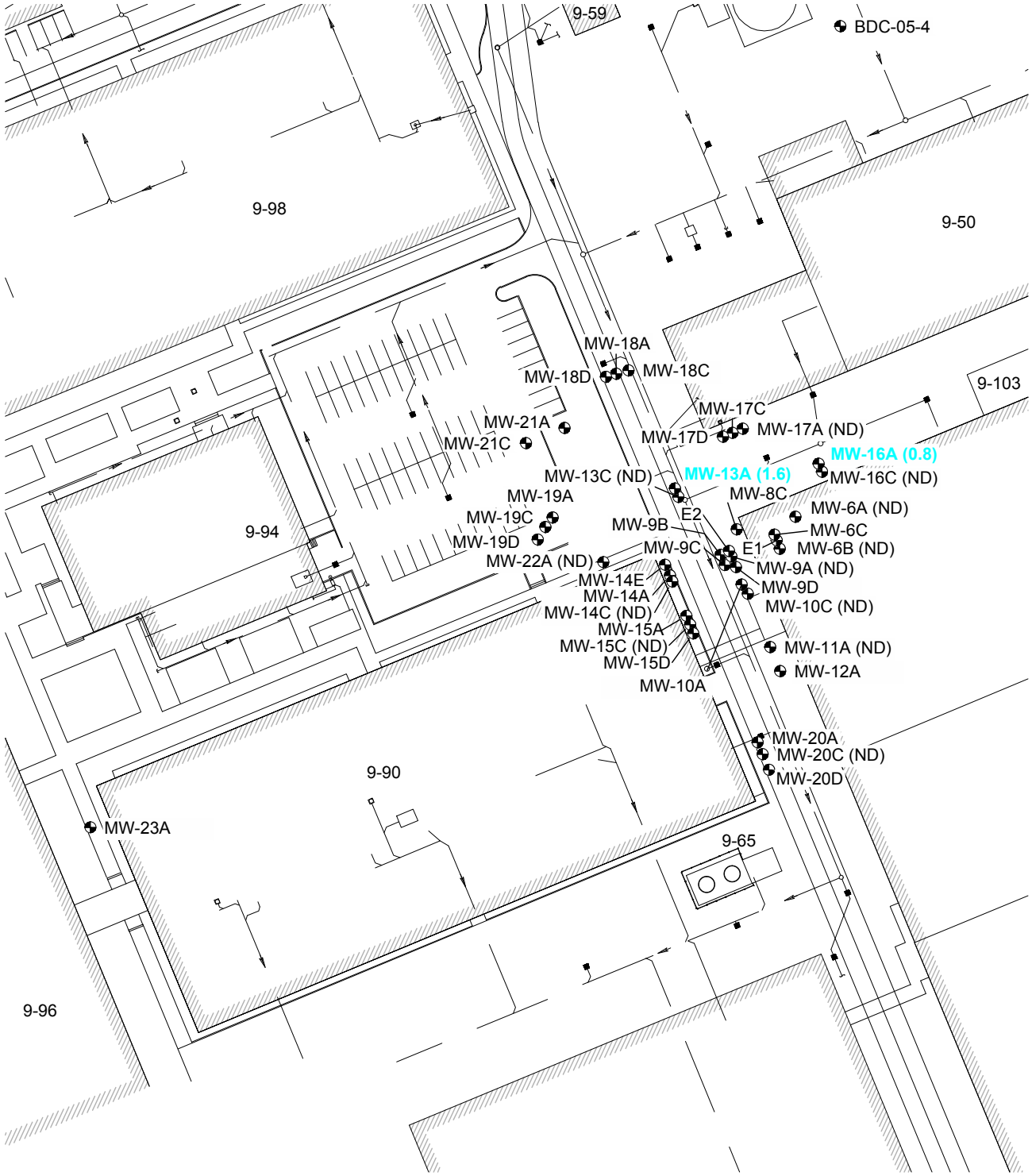
- **SWMU-20 VOC SUMMARY MAPS**
- **SWMU-20 ANALYTICAL RESULTS SUMMARY (January 1994 through Present)**
- **SWMU-20 VOC CONCENTRATION TREND CHARTS (January 1994 through Present)**
- **SWMU-20 CLEANUP ACTION SUMMARY – SOURCE ZONE**
- **SWMU-20 CLEANUP ACTION SUMMARY – NON-SOURCE ZONE**

SWMU-20 VOA/CONVENTIONALS DATA
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
APRIL 2016

Sample Name:	DC-MW-6A		DC-MW-6B		DC-MW-9A		DC-MW-10C		DC-MW-11A		DC-MW-13A		MW-13A-Dup		DC-MW-13C		DC-MW-14C		DC-MW-15C		DC-MW-16A		DC-MW-16C		DC-MW17A		DC-MW-20C		DC-MW-22A		TRIP BLANK	
Lab SDG:	1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430		1652430	
Lab Sample ID:	8341840		8341842		8341828		8341827		8341826		8341835		8341844		8341836		8341839		8341838		8341830		8341831		8341832		8341837		8341833		8341845	
Sample Date:	04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		04/19/2016		03/22/2016	
Test ID: VOA SW8260C (µg/L)																																
cis-1,2-Dichloroethene	1	J	2.0	UJ	0.2	U	0.5		20		0.2	U	0.2	U	0.2	U	0.2	U	1.2	J	10	J	0.9		8.0	J	2.2		0.5	J	0.2	U
Tetrachloroethene	0.2	UJ	2.0	UJ	0.2	U	0.2	U	0.2	U	1.6		1.6		0.2	U	0.2	U	0.2	UJ	0.8	J	0.2	U	2.0	UJ	0.2	U	0.2	UJ	0.2	U
Trichloroethene	0.2	UJ	2.0	UJ	0.2	U	0.2	U	0.3		0.3		0.3		0.2	U	0.2	U	0.6	J	0.7	J	0.2	U	2.0	UJ	0.2		0.2	UJ	0.2	U
Vinyl Chloride	0.7	J	2.0	UJ	0.7		0.2	U	0.4		0.2	U	0.2	U	0.3		0.3		0.5	J	0.2	UJ	0.3		2.0	UJ	0.3		0.2	UJ	0.2	U
NATURAL ATTENUATION PARAMETERS																																
Method Modified RSK175 (µg/L)																																
Methane	18000		17000		22000																								15000			
Ethane	100	U	100	U	34																								100	U		
Ethene	100	U	100	U	1.0	U																							100	U		
Conventional Parameters																																
Sulfate (mg/L) (EPA 300.0)	0.30	U	0.30	J	0.30	U																							1.9	J		
Total Organic Carbon (mg/L) (SM5310C)	203		306		33.3	J																							2980			

µg/L = micrograms per liter
mg/L = milligrams per liter
EPA = U.S. Environmental Protection Agency

U = Compound was not detected at the reported concentration.
UJ = The analyte was not detected in the sample; the reported sample reporting limit is an estimate.
J = Analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.



Legend

- Monitoring Well Location
- (ND) Tetrachloroethene Not Detected at 0.2 µg/L Detection Limit
- (1.6) Tetrachloroethene Groundwater Concentration in µg/L

Boeing/Developmental Center/Summary Report | G:\Projects\025\087\016\020\Semiannual GW Report April 2016\Figure 1-6.dwg (A) "Figure 1" 5/25/2016

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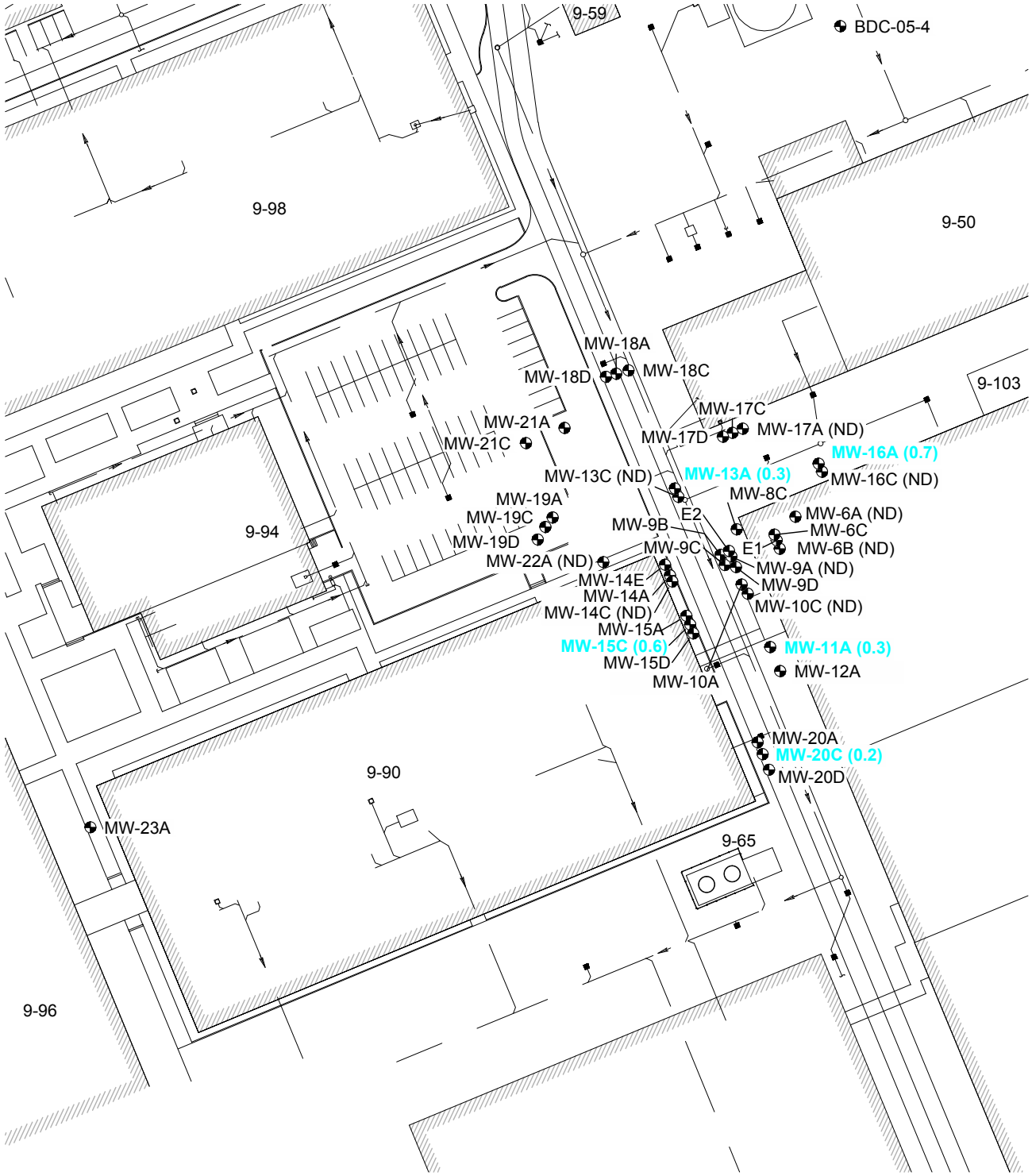
Boeing Developmental Center Tukwila, Washington	**SWMU-20 Tetrachloroethene April 2016 Groundwater Concentrations**	Figure 1



Boeing/Developmental Center/Summary Report | G:\Projects\025\087\016\020\Semiannual GW Report April 2016\Figure 1-6.dwg (A) "Figure 2" 5/25/2016

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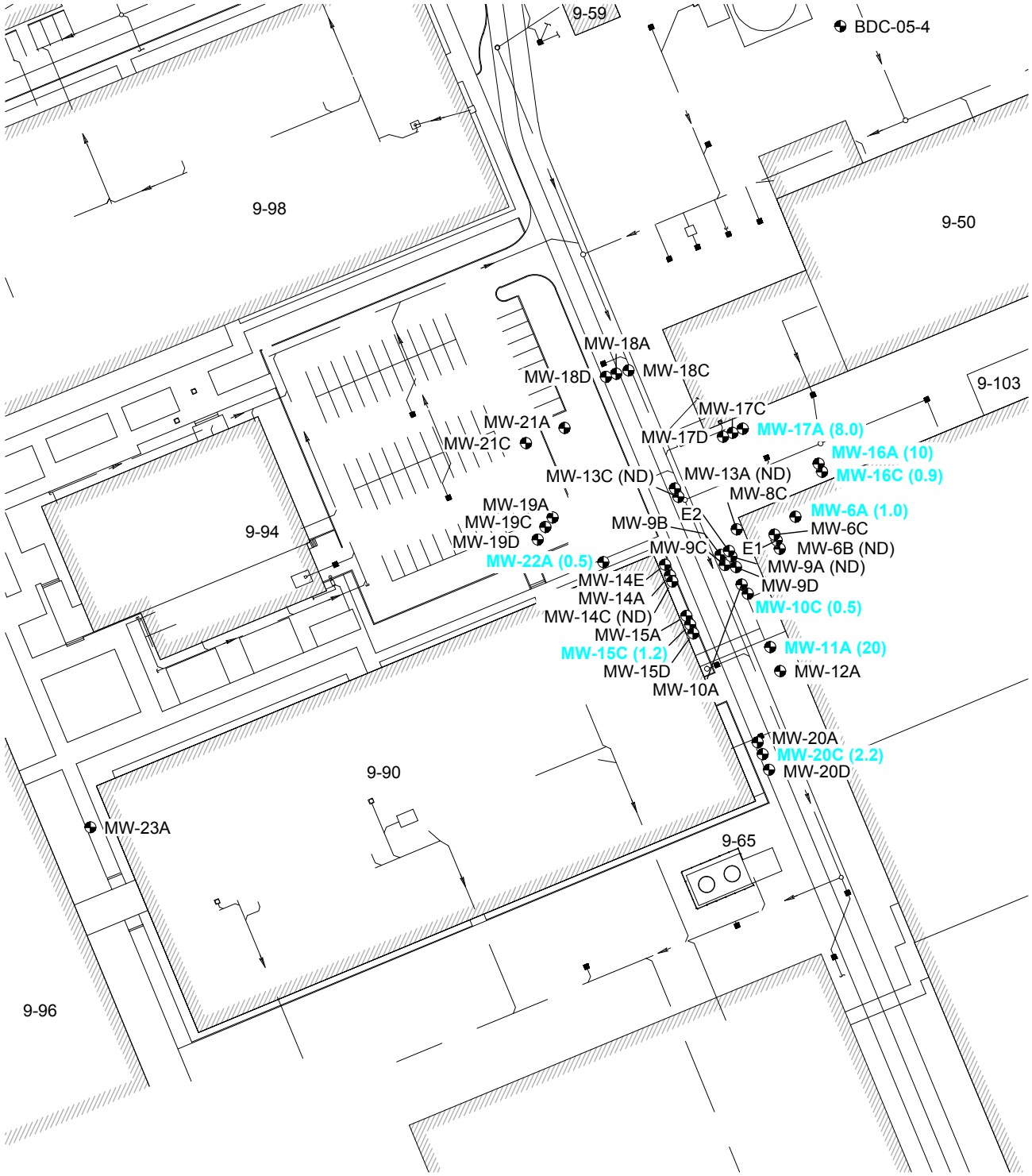
Boeing Developmental Center Tukwila, Washington	**SWMU-20 Trichloroethene April 2016 Groundwater Concentrations**	Figure 2



Legend

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

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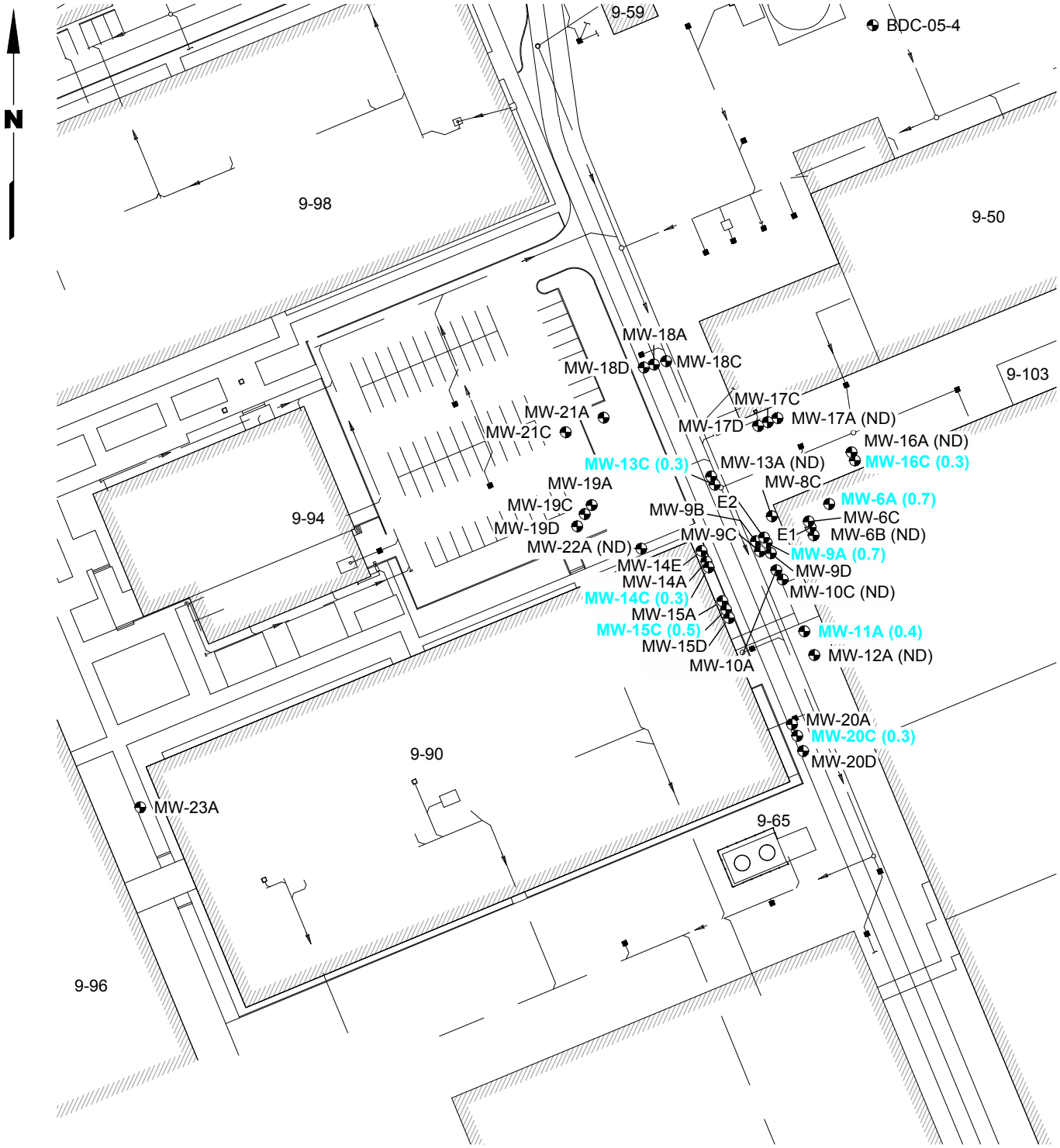
Boeing Developmental Center Tukwila, Washington	**SWMU-20 Cis-1,2-Dichloroethene April 2016 Groundwater Concentrations**	Figure 3



Legend

- Monitoring Well Location
- (ND) Vinyl Chloride Not Detected at 0.2 µg/L Detection Limit
- (0.7) Vinyl Chloride Groundwater Concentration in µg/L

Boeing/Developmental Center/Summary Report | G:\Projects\025\087\016\020\Semiannual GW Report April 2016\Figure 1-6.dwg (A) "Figure 4" 5/25/2016

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Boeing Developmental Center Tukwila, Washington	**SWMU-20 Vinyl Chloride April 2016 Groundwater Concentrations**	Figure 4

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

TETRACHLOROETHENE (µg/L)

	Jan-94	May-95	Oct-95	Feb-96	May-96	Aug-96	Nov-96	Feb-97	May-97	Aug-97	Nov-97	Jun-98	Oct-98	Jun-99	Nov-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Nov-03	May-04	Aug-04	Oct-04	Feb-05	Mar-05	May-05
06A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	<1.0	<1.0	nt	<1.0
06B	**27**	**5.87**	**14.4**	**9.62 J**	**26.18**	**13.7**	**14.3**	**21.5**	**21.3**	**17**	**16.9**	**18.9**	**16.3**	**22.6**	**2.3**	**6**	**10.19**	**2.6**	**2.4**	**10**	**10**	**7.9**	**3.9**	**9.5**	**1.9**	<1.0	<1.0	nt	<2.0
06C	**22**	<1.00	<10.00	<10.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0
08C	**16**	<1.00	<5.00	<5.00	<3.33	<10.00	**13.5**	<5.00	<4.00	<4.00	<4.00	**7.8**	<5.00	<1.00	<2.00	<2.00	<2.00	<1.00	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	nt	<1.0	nt	nt	<1.0
09A	**420**	**2568.25**	**1589**	**1970**	**785.7**	**114**	**272**	**98**	**76**	**96.9**	**56.6**	**39.4**	**94**	**5.1**	**38**	**40**	**36.6**	**12.65**	**16**	**14**	**540**	**1800**	**1000**	**150**	<3.0	<5.0	<10	nt	<1.0
09B	**820**	**1972.65**	**668.1**	**1266**	**934.6**	**78.9**	**75.9**	**44.3**	**35**	**10.9**	**21.5**	**31.3**	<10.00	**6.74**	**3.6**	<2.00	**6.62**	**1.18**	**2.1**	<1.0	<1.0	**1.0**	**250**	<3.0	<5.0	<5.0	<10	nt	<1.0
09C	nd	**11.32**	<5.00	<10.00	**1.24**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0
09D	**8.8**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
10A	**180**	**635.8**	**754 E**	**468.85**	**242.1**	**114**	**342**	**67.5**	**77.8**	**76.5**	**70.3**	**72.5**	**86.4**	**38**	**21.5**	**16.6**	**21.63**	**30.3**	**11**	**24**	**24**	**34**	**58**	**29**	**14**	**15**	**4.7**	nt	**4.2**
10C	**6.9**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
11A	**5.2**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
12A	**3.9**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
13A	**10**	**4.17**	<5.00	<5.00	**6.82**	**3**	**2.1**	**3.2**	**2.1**	**1.7**	**1.5**	**1.6**	**1.3**	<1.00	<1.00	**1.2**	<1.00	<1.00	**1.6**	**2.7**	**2.4**	**3.4**	**3.0**	**5.1**	nt	**4.3**	nt	nt	**6.1**
13C	**5.1**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
14A	**410**	**4.42**	<5.00	**133.57**	**96.06**	**11.2**	<5.00	<4.00	<2.00	<2.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	nt	<10
14C	**7.2**	**9.02**	**10.53**	**8.64 J**	**5.44**	**6.1**	<1.00	<10.00	<10.00	<10.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
14E	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15A	**11**	<1.00	<5.00	<5.00	<5.00	<2.00	<1.00	<4.00	<2.00	<1.00	<2.00	<3.33	<10.00	<1.00	<10.00	<10.00	<10.00	<1.00	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
15C	**13**	<1.00	<33.30	<5.00	<1.00	**1.1**	<1.00	<2.00	<10.00	<10.00	<10.00	<3.33	<1.00	<2.00	<2.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
16A	**1.6**	**1.10**	<5.00	<5.00	<1.00	**1.7**	<1.00	**1.1**	<1.00	<1.00	<1.00	**1.64**	**1.03**	**1.3**	**2.3**	**2.2**	<1.00	<1.00	<1.0	<1.0	**1.2**	**1.2**	**1.1**	**1.2**	nt	**1.2**	nt	nt	**1.2**
16C	nd	<1.00	<5.00	<10.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
17A	**36**	1.39	<5.00	<5.00	**1.55**	<1.00	**1.3**	**2.7**	**1.90 J**	**2.2**	<1.00	**2.6**	**2.4**	**2.5**	**2.1**	**2.6**	**4.15**	nt	<1.0	**3.8**	**4.6**	**4.6**	**4.8**	**4.8**	nt	**5.2**	nt	nt	nt
17C	**36**	<1.00	<5.00	<5.00	<1.00	**1.6**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	**46**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	**5.4**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	nt	nt	nt
18C	**4.6**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
18D	**4.6**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	**6**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	<1.0	nt	<1.0
19C	**6.5**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
19D	**9.5**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	**3.4**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	**3.9**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
20D	**4.3**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
22A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	
23A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

TETRACHLOROETHENE (µg/L)

	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	Apr-15	Oct-15	Apr-16
06A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
06B	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2.0
06C	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
08C	nt	<1.0	nt	<10	nt	<5.0	nt	<3.0	<5.0	<5.0	<5.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	**1.9**	<10	<5.0	<1.0	<1.0	<2.0	<0.2	<0.2	<2.0	<2.0	<2.0	<2.0	<0.2	<0.2	<0.2	<0.2
09B	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09C	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
10A	**2.7**	**3.3**	**3.7**	**1.8**	**1.6**	<0.2	**1.2**	**1.1**	**1.2**	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<0.2	nt	nt	nt
10C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
11A	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<2.0	<2.0	<2.0	<0.2	<0.2	**0.2**	<0.2
12A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	**0.2**	<0.2	<0.2	<0.2	**0.3**	**0.3**	nt	nt	nt
13A	nt	**6.0**	nt	**7.1**	nt	**8.3**	nt	**8.2**	**6.4**	**8.7**	**6.5**	**7.7**	**9.2**	**9.4**	**3.6**	**3.9**	**1.6**	**2.3**	**2.2**	**4.5**	**2.2**	**3.1**	**2.3**	**1.8**	**1.5**	**1.6**
13C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	<0.2
14A	<10	<3.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	nt	nt	nt
14C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	<0.2
14E	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
15A	nt	<5.0	nt	<5.0	nt	<3.0	nt	<1.0	<1.0	<3.0	<1.0	<3.0	<1.0	<1.0	<1.0	<10	<0.2	<0.1	<0.2	<0.5	<0.2	<0.2	<0.2	nt	nt	nt
15C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<5.0	<2.0	<2.0	<0.2	<0.2	<0.2	<0.2
15D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
16A	nt	**1.3**	nt	**1.0**	nt	<0.2	nt	**1.1**	**1.7**	**1.2**	**1.5**	**1.6**	**2.2**	**1.4**	**1.3**	**1.6**	**1.4**	**1.6**	**1.1**	**1.4**	**2.1**	**1.4**	**1.6**	**1.4**	**1.5**	**0.8**
16C	nt	<1.0	nt	<1.0	nt	**1.2**	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
17A	nt	**4.0**	nt	**4.2**	nt	**2.2**	nt	**4.7**	**4.2**	**4.3**	**4.2**	**3.2**	**3.7**	**4.0**	**2.3**	**3.1**	**2.6**	**3.1**	**2.8**	**3.6**	**3.9**	**3.6**	**2.9**	**3.4**	**3.4**	<2.0
17C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18D	nt	nt	nt		nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<2.0	<5.0	<2.0	<2.0	<0.2	<0.2	<0.2	<0.2
20D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
22A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
23A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

µg/L = micrograms per liter
nd = Not Detected.
nt = Not Tested.

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

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

TRICHLOROETHENE (µg/L)

	Jan-94	May-95	Oct-95	Feb-96	May-96	Aug-96	Nov-96	Feb-97	May-97	Aug-97	Nov-97	Jun-98	Oct-98	Jun-99	Nov-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Nov-03	May-04	Aug-04	Oct-04	Feb-05	Mar-05	May-05
06A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**1.0**	<1.0	<1.0	<1.0	nt	<1.0
06B	**4.2**	**3.57**	**6.00 J**	<5.00	**7.37**	**3.5**	**2.5**	**4.9**	**4.7**	**4.6**	**6.5**	**3.5**	**2.6**	**4.54**	**2.2**	**4.7**	**8.71**	**5.83**	**4.7**	**5.9**	**4.5**	**2.9**	**1.0**	**3.2**	**1.2**	<1.0	<1.0	nt	<2.0
06C	**1.6**	<1.00	**31.36**	<10.00	<1.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**91.6**	<2.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0
08C	**21**	**3.16**	<5.00	<5.00	<3.33	<10.00	**26.2**	<5.00	<4.00	<4.00	<4.00	**26.6**	<5.00	<1.00	<2.00	<2.00	<2.00	<1.00	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	nt	<1.0	nt	nt	<1.0
09A	**500**	**1796.5**	**1507**	**2318**	**1160**	**90.8**	**191**	**49.3**	**51.1**	**69.2**	**56.4**	**15.4**	**77**	**3.5**	**35**	**23**	**24.3**	**25.21**	**32**	**24**	**580**	**990**	**1500**	**230**	**11**	**19**	<10	nt	<1.0
09B	**160**	**1463**	**524.7**	**1206**	**554**	**58.6**	**35.2**	**28.7**	**31.5**	**4.9**	**15.4**	**20.65**	<10.00	**7.5**	**4.8**	**2.6**	**11.2**	**5.79**	**4.8**	**2.5**	**12**	**9.7**	**370**	**4.2**	**16**	**17**	<10	nt	<1.0
09C	nd	**19.41**	<5.00	<10.00	**3.54**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0
09D	**2.2**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
10A	**120**	**333.23**	**411 E**	**268.41**	**115.3**	**56.7**	**128**	**28.4**	**38.2**	**36.6**	**48.8**	**23.8**	**33.9**	**19.2**	**14**	**8.3**	**13.11**	**17.02**	**18**	**24**	**29**	**32**	**49**	**27**	**12**	**15**	**4.8**	nt	**5.4**
10C	**3.9**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
11A	**7**	**2.41**	<5.00	<5.00	**2.54**	**1.9**	**1**	<1.00	<1.00	**1.2**	**1.6**	<1.00	**1.03**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	**1.9**	**2.2**	**2.2**	**2.8**	**2.1**	nt	**2.0**	nt	nt	**2.0**
12A	**5.5**	**1.13**	<5.00	<5.00	<1.00	**1.7**	**1.2**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
13A	**31**	**12.23**	<5.00	**9.57 J**	**16.52**	**3.4**	**3.4**	**2**	**1.5**	**2.9**	**3**	**1.1**	**1.7**	**1.8**	**2.3**	**2.4**	**2.12**	**1.28**	<1.0	**3.4**	**3.3**	**3.9**	**3.8**	**4.6**	nt	**4.0**	nt	nt	**4.6**
13C	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
14A	**600**	**6.25**	<5.00	**151.58**	**146.72**	**84.1**	**2.8**	<4.00	<2.00	<2.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.9**	**39**	<5.0	nt	<10
14C	**6.6**	**14.41**	**21.93**	**13.33**	**7.61**	**12.5**	<1.00	<10.00	<10.00	<10.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
14E	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15A	**7.5**	<1.00	<5.00	<5.00	<5.00	<2.00	<1.00	<4.00	<2.00	<1.00	<2.00	<3.33	<10.00	<1.00	<10.00	<10.00	<10.00	<1.00	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
15C	**12**	<1.00	<33.30	<5.00	<1.00	**7.5**	<1.00	<2.00	**12**	<10.00	<10.00	<3.33	<1.00	<2.00	<2.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
16A	**4.4**	**5.02**	<5.00	<5.00	**2.57**	**4**	**2.1**	**2.6**	**2**	**1.9**	<1.00	<1.00	<1.00	**1.01**	**1.4**	**1.2**	**1.08**	<1.00	<1.0	<1.0	**1.5**	**1.3**	**1.2**	**1.2**	nt	**1.3**	nt	nt	**1.8**
16C	nd	<1.00	<5.00	<10.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
17A	**7.2**	**17.42**	**17.04**	<5.00	**7.28**	<1.00	**9.8**	**17.5**	**4.9**	**18**	**2**	<1.00	**12.4**	**11.1**	**11.5**	**6.6**	**13.99**	nt	**5.9**	**7.4**	**7.5**	**7.4**	**7.9**	**6.5**	nt	**4.8**	nt	nt	nt
17C	**2.1**	<1.00	<5.00	<5.00	<1.00	**14.1**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	**2.3**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	nt	nt	nt
18C	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
18D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	**1.5**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	<1.0	nt	<1.0
19C	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
19D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	**1.1**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	**1.8**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
20D	**1.5**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
22A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	
23A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

TRICHLOROETHENE (µg/L)

	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	Apr-15	Oct-15	Apr-16
06A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
06B	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2.0
06C	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
08C	nt	<1.0	nt	<10	nt	<5.0	nt	<3.0	<5.0	<5.0	<5.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	**0.2**	**4.6**	<10	<1.0	<1.0	<1.0	<2.0	<0.2	<0.2	<2.0	<2.0	<2.0	<2.0	<0.2	<0.2	<0.2	<0.2
09B	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09C	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
10A	**6.3**	**6.7**	**9.6**	**3.7**	**1.6**	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<0.2	nt	nt	nt
10C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
11A	nt	**2.0**	nt	**1.1**	nt	**1.5**	nt	**1.5**	**1.1**	**1.2**	**1.2**	<1.0	**1.0**	**1.1**	<1.0	<1.0	**0.5**	**0.7**	<2.0	<2.0	<2.0	<2.0	**0.4**	**0.5**	**0.2**	**0.3**
12A	nt	<1.0	nt	<1.0	nt	**0.7**	nt	<1.0	<1.0	**0.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.6**	<0.2	**0.4**	<0.2	**0.5**	<0.2	<0.2	nt	nt	nt
13A	nt	**4.5**	nt	**4.6**	nt	**6.5**	nt	**7.0**	**4.2**	**6.8**	**3.7**	**5.6**	**6.0**	**5.3**	**2.8**	**2.4**	<1.0	**0.8**	**0.8**	**2.5**	**0.6**	**1.3**	**0.5**	**0.4**	**0.3**	**0.3**
13C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	<0.2
14A	<10	<3.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	nt	nt	nt
14C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	<0.2
14E	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
15A	nt	<5.0	nt	<5.0	nt	<3.0	nt	<1.0	<1.0	<3.0	<1.0	<3.0	<1.0	<1.0	<1.0	<10	<0.2	<1.0	<0.2	<0.5	<0.2	<0.2	<0.2	nt	nt	nt
15C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	**3.2**	<5.0	<2.0	<2.0	<0.2	<0.2	<0.2	**0.6**
15D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
16A	nt	**2.2**	nt	**1.4**	nt	**0.8**	nt	**1.3**	**1.2**	**1.3**	**1.4**	**1.6**	**1.5**	**1.4**	**1.1**	**1.4**	**1.3**	**1.7**	**1.5**	**1.5**	**1.8**	**1.6**	**1.5**	**1.4**	**1.5**	**0.7**
16C	nt	<1.0	nt	<1.0	nt	**2.3**	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
17A	nt	**5.4**	nt	**4.4**	nt	**6.3**	nt	**5.3**	**4.3**	**5.1**	**5.2**	**4.9**	**4.5**	**3.1**	**4.8**	**2.2**	**2.8**	**2.0**	**3.5**	**2.8**	**3.4**	**2.6**	**3.1**	**2.3**	**2.6**	<2.0
17C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18D	nt	nt	nt		nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	<1.0	<1.0	<1.0	<1.0	<1.0	**0.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nt	<1.0	nt	<1.0	nt	**0.2**	nt	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<2.0	<5.0	<2.0	<2.0	<0.2	<0.2	<0.2	**0.2**
20D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
22A	<1.0	<1.0	<1.0	<1.0	<1.0	**0.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
23A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

µg/L = micrograms per liter
nd = Not Detected.
nt = Not Tested.

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

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

CIS-1,2-DICHLOROETHENE (µg/L)

	Jan-94	May-95	Oct-95	Feb-96	May-96	Aug-96	Nov-96	Feb-97	May-97	Aug-97	Nov-97	Jun-98	Oct-98	Jun-99	Nov-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Nov-03	May-04	Aug-04	Oct-04	Feb-05	Mar-05	May-05
06A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**23**	**45**	**2.6**	**3.3**	nt	**2.6**
06B	**23**	**43.71**	**53.75**	**29.45**	**58.31**	**46.3**	**30.5**	**37.4**	**60.9**	**61.8**	**76.4**	**66.7**	**9.9**	**70.1**	**49.7**	**71.5**	**91.77**	**63.94**	**27**	**40**	**23**	**13**	**11**	**10**	**13**	**10**	**11**	nt	**5.5**
06C	**7.9**	**14.57**	**99.09**	<10.00	**1.01**	**107**	**1.9**	**3.1**	**22.1**	**28.3**	**12.3**	**1.1**	**181 E**	<2.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	<1.0	**3.6**	nt	**1.1**
08C	**44**	**14.95**	<5.00	**5.55 J**	**8**	**1.1**	**37.6**	<5.00	**37.3**	**46.1**	**42.3**	**38.4**	<5.00	**1.1**	<2.00	**3.2**	<2.00	<1.00	<1.0	<1.0	<1.0	<3.0	<5.0	<1.0	nt	<1.0	nt	nt	<1.0
09A	**2500**	**5790.9**	**3286**	**7484**	**6143**	**443**	**816**	**520**	**258**	**206.E**	**199**	**94.3**	**680**	**15.5**	**187**	**421**	**60.75**	**266.6**	**100**	**280**	**1600**	**2300**	**2300**	**970**	**370**	**460**	**41**	nt	<1.0
09B	**940**	**5010.35**	**1307 E**	**3407 E**	**1521**	**207**	**142**	**164 E**	**510**	**35.1**	**111**	**939 E**	**178**	**122.04**	**41.2**	**102.4**	**135.2**	**112.3**	**100**	<180	**180**	**140**	**850**	**250**	**530**	**300**	**890**	nt	**12**
09C	**520**	**431.66**	**159.69**	**70**	**33.67**	**29.8**	**1.6**	**4.6**	**2.6**	**2**	**1.7**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.1**	**6.7**	**2.7**	**4.1**	**8.9**	**4.0**	**1.7**	<1.0	**1.7**	nt	**1.2**
09D	**5.1**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
10A	**470**	**421.26**	**297 E**	**249.16**	**159.2**	**90.1**	**17.8**	**29**	**66.1**	**58.5**	**74.1**	**29.3**	**6.9**	**33.3**	**20.6**	**10.6**	**14.14**	**14.09**	**36**	**80**	**110**	**88**	**98**	**80**	**170**	**100**	**24**	nt	**26**
10C	**14**	**1.93**	<5.00	<5.00	**1.01**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	**3.7**	**3.3**	**14**	**6.2**	**4.3**	nt	**6.4**	nt	nt	**4.0**
11A	**54**	**15.86**	**10.82**	**7.17 J**	**10.27**	**9.3**	**6.4**	**4.9**	**6.6**	**6.1**	**4.2**	**2.8**	**2.3**	**2.1**	**1.1**	**1.5**	**1.55**	**1.27**	**2.1**	**6.0**	**12**	**17**	**18**	**21**	nt	**20**	nt	nt	**20**
12A	**20**	**2.30**	**17.5**	<5.00	**1.09**	**9.5**	**6.6**	<1.00	**6.1**	**3.7**	**3**	**1.7**	**1.7**	**1.8**	**1.03**	**1.9**	**2.07**	**1.46**	**2.2**	**1.8**	**3.3**	**1.4**	**4**	**1.8**	nt	**4.4**	nt	nt	**2.0**
13A	**8.2**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.6**	<1.00	<1.00	**1.2**	**1.3**	**1.2**	**1.2**	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
13C	**16**	**1.14**	<5.00	<5.00	<1.00	**1.3**	<1.00	**1.3**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	**1.4**	**<1.0**	<1.0	nt	<1.0	nt	nt	<1.0
14A	**590**	**15.50**	**9.83 J**	**294.36**	**115.94**	**249**	**114**	**6.4**	**24.2**	**18.3**	**9.5**	**4.9**	**3.7**	**7**	**3.2**	**3.8**	<1.00	<1.00	<1.0	<1.0	**7.2**	**23**	**170**	**140**	**560**	**1200**	**300**	nt	<10
14C	**110**	**187.91**	**1017.82**	**237.4**	**70.06**	**326**	**211**	**183**	**163**	**136**	**82.7**	**25.6**	**21.7**	**6.2**	<1.00	**1.2**	**2.83**	**1.64**	<1.0	**1.5**	**2.4**	**31**	**13**	**63**	nt	**22**	nt	nt	**11**
14E	**1.1**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15A	**9.1**	**3.29**	<5.00	<5.00	<5.00	**3.6**	**3.5**	**4.5**	**5**	**5.5**	**5.5**	**15.65**	<10.00	<1.00	<10.00	<10.00	<10.00	**4.99**	**4.9**	**2.8**	**2.8**	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
15C	**92**	**69.14**	**640.52**	**93.62**	**1.47**	**463**	**532**	**187**	**1470**	**1100**	**719**	**785 E**	**90.5**	**53.2**	**28.4**	**1.01**	**2.53**	<1.00	**1.1**	<1.0	<1.0	**2.9**	**5.7**	**9.1**	nt	**11**	nt	nt	**13**
15D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
16A	**5.5**	**12.63**	**5.38 J**	<5.00	**25.39**	**12**	**3.2**	**6.2**	**2.4**	**1.7**	<1.00	<1.00	<1.00	<1.00	<1.00	**1.76**	**1.82**	**2.6**	<1.0	**1.2**	**2.4**	**1.3**	**2.3**	nt	**1.8**	nt	nt	nt	**2.6**
16C	**14**	**11.83**	**6.24 J**	<10.00	**5.66**	**2.6**	**1.6**	**1.6**	**1.13**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	**1.7**	nt	**2.4**	nt	nt	**2.8**
17A	**4.3**	**1.38**	<5.00	<5.00	**1.09**	<1.00	**1.4**	**1.2**	**2.90 J**	**4.13**	<1.00	**2.3**	**3.8**	**4.1**	**4.3**	**2.3**	**2.1**	nt	**2**	<1.0	**1.0**	**1.4**	**1.6**	**1.0**	nt	**1.2**	nt	nt	nt
17C	**5.3**	<1.00	<5.00	<5.00	**1.19**	**1.6**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	**1.8**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	nt	nt	nt
18C	**1.3**	**2.02**	<5.00	<5.00	<1.00	**1**	<1.00	<1.00	<1.00	<1.00	**1.1**	**1.8**	**2.8**	**1.9**	**2.1**	**1.3**	**1.59**	**1.42**	<1.0	<1.0	<1.0	**1.7**	**<1.0**	<1.0	nt	<1.0	nt	nt	<1.0
18D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	**2.4**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	<1.0	nt	<1.0
19C	**1.7**	**1.17**	<5.00	<5.00	**1.37**	**1.3**	<1.00	<1.00	**1.2**	**1.2**	**1.2**	**2**	**1.2**	**1.4**	<1.00	**1.03**	<1.00	**1.01**	<1.0	<1.0	<1.0	<1.0	1	<1.0	nt	<1.0	nt	nt	<1.0
19D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	**16**	**7.34**	**6.06 J**	<5.00	**2.46**	**2.5**	**2.1**	**1.9**	**1.6**	<1.00	<1.00	<1.00	**1.5**	<1.00	<1.00	**1.3**	<1.00	**1.09**	**1.1**	<1.0	**1.3**	**2.1**	**1.6**	**1.4**	nt	**1.7**	nt	nt	**1.7**
20D	**1.8**	**2.22**	<5.00	<5.00	**46.38**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.0	<1.0	**1.3**	nt	nt	nt	nt	nt	nt	nt	nt
22A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**3.5**	**2.3**	
23A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

CIS-1,2-DICHLOROETHENE (µg/L)

	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	Apr-15	Oct-15	Apr-16
06A	**1.6**	**1.3**	**1.4**	<1.0	<1.0	**0.4**	<1.0	<1.0	<0.2	<1.0	**1.7**	<4.0	**1.9**	**1.3**	<1.0	<1.0	**0.3**	**0.4**	**0.3**	<0.5	**0.4**	**0.4**	**0.4**	**0.6**	**0.2**	**1**
06B	**1.8**	**1.1**	<1.0	<1.0	<1.0	**1.4**	**3.8**	**1.4**	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	**0.5**	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<2.0
06C	**1.1**	**1.1**	<1.0	<1.0	<1.0	**0.3**	<1.0	<1.0	**0.2**	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
08C	nt	<1.0	nt	<10	nt	<5.0	nt	<3.0	<5.0	<5.0	<5.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09A	<1.0	<1.0	<1.0	<1.0	<1.0	**0.3**	<1.0	<1.0	<1.0	**110**	**160**	<10	<5.0	<1.0	<1.0	<2.0	**0.2**	**0.2**	<2.0	<2.0	<2.0	<2.0	<0.2	<0.2	<0.2	<0.2
09B	<1.0	<1.0	<1.0	<1.0	<1.0	**0.3**	<1.0	<1.0	<1.0	**0.2**	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09C	**7.6**	**1.2**	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
10A	**48**	**47**	**42**	**63**	**38**	**7.4**	**32**	**28**	**22**	**22**	**1.6**	<2.0	<1.0	<1.0	<1.0	<2.0	**0.2**	**0.2**	**0.3**	**0.2**	**0.2**	<1.0	**0.2**	nt	nt	nt
10C	nt	<1.0	nt	**1.5**	nt	**1.9**	nt	**6.7**	**7.2**	**15**	**8.5**	<1.0	<1.0	<1.0	**3.5**	**5.8**	**3.7**	**5.4**	**6.1**	**6.0**	**3.5**	**5.4**	**2.6**	**2.2**	**1.0**	**0.5**
11A	nt	**22**	nt	**20**	nt	**24**	nt	**26**	**27**	**26**	**33**	**26**	**30**	**26**	**22**	**22**	**23**	**24**	**25**	**22**	**24**	**19**	**24**	**21**	**19**	**20**
12A	nt	**3.8**	nt	**1.5**	nt	**4.4**	nt	**2.4**	**3.2**	**3.2**	**4.7**	**1.4**	**4.7**	<1.0	**4.3**	<1.0	**3.1**	<0.2	**2.1**	**0.5**	**2.2**	<0.2	**0.3**	nt	nt	nt
13A	nt	<1.0	nt	<1.0	nt	**0.3**	nt	**0.4**	<1.0	**0.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	**0.5**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
13C	nt	<1.0	nt	<1.0	nt	**0.8**	nt	**0.8**	<1.0	**0.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	<0.2
14A	<10	**6.0**	<1.0	**2.1**	**3.0**	<1.0	<1.0	**1.5**	**1.6**	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.6**	**0.3**	**0.6**	<0.5	**0.5**	**0.3**	**0.4**	nt	nt	nt
14C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	**1.1**	**1.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	<0.2
14E	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
15A	nt	<5.0	nt	<5.0	nt	<3.0	nt	**1.4**	<1.0	<3.0	<1.0	<3.0	<1.0	<1.0	<1.0	<10	**0.3**	<1.0	**0.4**	**0.6**	**0.5**	**0.6**	**0.4**	nt	nt	nt
15C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	**1.8**	**1.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<5.0	<2.0	<2.0	**0.5**	**0.6**	**0.5**	**1.2**
15D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
16A	nt	**2.1**	nt	**2.3**	nt	**4.2**	nt	**1.9**	**1.2**	**1.2**	**1.0**	<1.0	<1.0	<1.0	<1.0	<1.0	**0.5**	**0.5**	**0.6**	<0.5	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**	**10**
16C	nt	**4.6**	nt	**5.2**	nt	**2.0**	nt	**8.8**	**7**	**7.8**	**5.3**	**5.0**	**4.9**	**3.7**	**3.3**	**3.7**	**3.3**	**4.8**	**4.9**	**3.9**	**4.4**	**3.4**	**3.4**	**2.2**	**2.7**	**0.9**
17A	nt	**1.1**	nt	<1.0	nt	**1.0**	nt	**1.0**	<1.0	**0.8**	**1.2**	**1.4**	**1.1**	<1.0	**2.3**	**1.5**	**1.0**	**0.5**	**0.9**	**0.8**	**1.0**	**0.4**	**0.9**	**0.4**	**1.1**	**8.0**
17C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18D	nt	nt	nt		nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	<1.0	<1.0	<1.0	<1.0	<1.0	**0.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19C	nt	<1.0	nt	<1.0	nt	**0.3**	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nt	**2.1**	nt	**1.8**	nt	**2.1**	nt	**1.6**	**1.6**	**1.6**	**1.5**	**1.4**	**1.7**	**1.3**	**1.4**	**1.1**	**1.3**	**1.2**	<2.0	<5.0	<2.0	<2.0	**0.9**	**0.7**	**1.0**	**2.2**
20D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
22A	**2.3**	**1.4**	**1.4**	**2.4**	**1.8**	**2.2**	**2.5**	**2.5**	**2**	**2.6**	**2.2**	**2.5**	**2.1**	**1.7**	**1.2**	**1.1**	**0.9**	**0.6**	**0.5**	**0.4**	**0.5**	**0.5**	**0.4**	**0.6**	**0.5**	**0.5**
23A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	**0.3**	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

µg/L = micrograms per liter
nd = Not Detected.
nt = Not Tested.

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

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

VINYL CHLORIDE (µg/L)

	Jan-94	May-95	Oct-95	Feb-96	May-96	Aug-96	Nov-96	Feb-97	May-97	Aug-97	Nov-97	Jun-98	Oct-98	Jun-99	Nov-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Nov-03	May-04	Aug-04	Oct-04	Feb-05	Mar-05	May-05
06A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**4.0**	**5.9**	**31**	<1.0	nt	<1.0
06B	**13**	**36.53**	**31.8**	**52.29**	**44.78**	**54.5**	**49.4**	**63.7**	**88.7**	**55**	**62.7**	**46.3**	**4.2**	**48.4**	**25.9**	**8**	**21.58**	**10.62**	**8.9**	**12**	**11**	**8.4**	**17**	**9.4**	**2.3**	**3.6**	<1.0	nt	<2.0
06C	30	**20.89**	**34.09**	**38.34**	**22.06**	**164**	**12**	**18.3**	**50.3**	**39.5**	**26.1**	**6**	**54.6**	**4.4**	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0
08C	**130**	**42.13**	**32.69**	**35.33**	**35.96**	**129**	**41.2**	**201**	**488**	**256**	**210**	**20.6**	<5.00	**49.7**	**21.4**	**2.4**	<2.00	<1.00	<1.0	<1.0	<1.0	<3.0	<5.0	**2.8**	nt	**3.5**	nt	nt	<1.0
09A	**240**	**917.05**	**449**	**1385**	**844.9**	**124**	**228**	**80.9**	**185**	**127**	**135**	**83.8**	**425**	**14**	**278**	**499**	**17.95**	**86.44**	**7.8**	**46**	**150**	**120**	**180**	**37**	**150**	**220**	**37**	nt	<1.0
09B	**140**	**648.6**	**175.6**	**836**	**228.2**	**104**	**62.6**	**41.7**	**270**	**20.9**	**50.7**	**439.56**	**132**	**152.36**	**66.6**	**82.6**	**146.7**	**78.9**	**110**	**7.6**	**27**	**19**	**360**	<3.0	**100**	**340**	**520**	nt	**24**
09C	**190**	**233.79**	**185 E**	**71.74**	**50.13**	**106**	**19.4**	**59.8**	**147**	**102.5**	**87.8**	**1.1**	<1.00	**59**	**16.4**	<1.00	<1.00	<1.00	<1.0	**18**	**8.6**	**5.6**	**8.0**	**3.3**	<1.0	**1.5**	<1.0	nt	<1.0
09D	nd	**1.37**	<5.00	<5.00	<1.00	**1**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
10A	**120**	**116.25**	**16.12**	**31.6**	**651.2**	**80.9**	**16.7**	**48.2**	**33.4**	**9.8**	**8.8**	**8.7**	**1.3**	**12.1**	**3.5**	**3**	**3.32**	**3.32**	**2.9**	**28**	**54**	**36**	**9.1**	**6.4**	**4.0**	**23**	**6.8**	nt	**7.2**
10C	**39**	**28.29**	**33.16**	**40.41**	**18.69**	**11.6**	**10.1**	**9**	<1.00	**4.3**	**3.8**	**1.7**	**1.6**	**2.8**	**1.4**	**2.1**	<1.00	<1.00	<1.0	**8.4**	**15**	**15**	**8.8**	**4.0**	nt	**11**	nt	nt	**1.9**
11A	**39**	**26.80**	**8.37 J**	**12.14**	**14.04**	**3.8**	**1.8**	<1.00	<1.00	<1.00	**3.4**	<1.00	<1.00	**1.1**	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
12A	**14**	<1.00	**17.16**	<5.00	<1.00	**2.9**	**8.6**	<1.00	**9.4**	**6.7**	**1.1**	**1.3**	<1.00	**2.7**	**1.06**	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
13A	**12**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
13C	**760**	**3.03**	<5.00	**15.24**	**11.48**	**3.6**	**1.9**	**2.5**	**2.2**	<1.00	<1.00	**1**	**1.6**	**1.8**	<1.00	<1.00	<1.00	<1.00	<1.0	**1.6**	**3.3**	**4.9**	**2.2**	**2.5**	nt	**3.3**	nt	nt	<1.0
14A	**170**	**11.38**	**30.32**	**44.4**	**36.4**	**339**	**232**	**162**	**270**	**158**	**70**	**29.1**	**13.74**	**58.2**	**20.9**	**19.7**	<1.00	<1.00	<1.0	<1.0	**69**	**28**	**240**	**110**	**180**	**650**	**1000**	nt	<10
14C	**120**	**103.49**	**1587.3**	**1477**	**134.78**	**414**	**175**	**1296**	**307**	**148**	**144**	**39.4**	**56.4**	**30.2**	<1.00	<1.00	**4.67**	**1.21**	<1.0	<1.0	**4.4**	**50**	**35**	**44**	nt	**75**	nt	nt	**6.1**
14E	**10**	**1.43**	<5.00	<5.00	<1.00	**1.3**	<1.00	<1.00	**1.3**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15A	**16**	**13.84**	**31.2**	**54.62**	**19.45**	**19.4**	**23**	**20.4**	**23.5**	**17.4**	**18.6**	**61.61**	**17.2**	**2.9**	**37**	**16**	<10.00	**3.86**	**1.8**	**2.0**	**3.3**	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
15C	**38**	**38.79**	**142.38**	**69.81**	**5.12**	**104**	**220**	**69**	**598**	**519**	**500**	**772 E**	**194 E**	**121.2**	**49.2**	**1.4**	**21.32**	<1.00	**1.5**	<1.0	**1.3**	**5.6**	**16**	**11**	nt	**17**	nt	nt	**6.4**
15D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**8.6**	**5.2**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
16A	**6**	**9.18**	<5.00	<5.00	**8.42**	**4.4**	<1.00	<1.00	**2.2**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
16C	**15**	**23.46**	**38.59**	**45.16**	**31.71**	**20.8**	**11.8**	**11.3**	**9.1**	**3**	<1.00	**1.4**	<1.00	**1.9**	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	**1.4**	**3.8**	**2.6**	**5.4**	nt	**8.5**	nt	nt	**7.7**
17A	nd	<1.00	<5.00	<5.00	<1.00	**1**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	nt
17C	**10**	**2.32**	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	nt	nt	nt
18C	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.1**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
18D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	<1.0	nt	<1.0
19C	**5.5**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
19D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	**47**	**20.12**	**12.63**	**13.77**	**8.32**	**6.7**	**3.4**	**3.3**	**3.4**	<1.00	<1.00	**1.6**	**1.8**	<1.00	**1.9**	<1.00	**1.06**	<1.00	<1.0	**1.4**	**2.7**	**4.0**	**3.1**	**2.4**	nt	**4.6**	nt	nt	**2.3**
20D	nd	**6.98**	<5.00	<5.00	**31.12**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
22A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**2.0**	**2.9**	
23A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

VINYL CHLORIDE (µg/L)

	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	Apr-15	Oct-15	Apr-16
06A	<1.0	**1.2**	**4.8**	**1.6**	**1.5**	**2.1**	**6.7**	**2.9**	**1.2**	**1.4**	<1.0	<4.0	<1.0	**1.9**	**1.7**	**1.4**	**0.8**	**1.2**	**0.8**	**1.3**	**2.4**	**1.5**	**2.7**	**3.3**	**2.5**	**0.7**
06B	**1.6**	**1.3**	**1.4**	**1.3**	**1.1**	**2.6**	**9.5**	**6.5**	**1**	<1.0	<1.0	<1.0	<1.0	**4.2**	**5.4**	**5.2**	**0.8**	**6.0**	**3.7**	**4.3**	**2.5**	**2.4**	**1.8**	**1.8**	**1.0**	<2.0
06C	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	**0.3**	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
08C	nt	<1.0	nt	<10	nt	<5.0	nt	<3.0	<5.0	<5.0	<5.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09A	<1.0	<1.0	<1.0	<1.0	**1.2**	**1.1**	<1.0	**2.8**	<1.0	**85**	**42**	<10	<5.0	<1.0	<1.0	<2.0	<0.2	<0.2	<2.0	<2.0	<2.0	<2.0	<0.2	<0.2	<0.2	**0.7**
09B	**1.7**	<1.0	**1.3**	<1.0	<1.0	**0.5**	<1.0	<1.0	<1.0	**0.4**	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09C	**2.2**	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	**0.2**	<1.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
10A	**76**	**73**	**150**	**19**	**20**	**9.2**	**35**	**44**	**78**	**180**	**5.0**	<2.0	<1.0	<1.0	<1.0	<2.0	**0.4**	**0.4**	**0.4**	**0.3**	**0.4**	<1.0	**0.3**	nt	nt	nt
10C	nt	**1.0**	nt	**2.2**	nt	**2.6**	nt	**5.8**	**5.6**	**6.9**	**7.5**	<1.0	<1.0	<1.0	**4.4**	**4.7**	**4.3**	**4.0**	**4.4**	**4.5**	**3.7**	**2.9**	**2.5**	**1.7**	**1.1**	<0.2
11A	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	**0.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.4**	**0.4**	<2.0	<2.0	<2.0	<2.0	**0.4**	**0.3**	**0.4**	**0.4**
12A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	nt	nt	nt
13A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
13C	nt	**3.8**	nt	**2.2**	nt	**3.4**	nt	**4.4**	**2**	**0.6**	**2.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.3**	<2.0	<2.0	<2.0	<1.0	**0.2**	**0.3**	**0.2**	**0.3**
14A	<10	<3.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	**0.2**	<0.2	<0.5	<0.2	**0.3**	**0.2**	nt	nt	nt
14C	nt	**1.8**	nt	<1.0	nt	**1.0**	nt	**2.5**	**11**	**22**	**4.3**	**1.1**	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	**0.3**
14E	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
15A	nt	<5.0	nt	<5.0	nt	<3.0	nt	**2.6**	**1.3**	<3.0	<2.0	<3.0	**1.4**	**1.6**	**1.4**	<10	**1.0**	**1.2**	**0.8**	**1.1**	**0.8**	**1.0**	**0.5**	nt	nt	nt
15C	nt	<1.0	nt	<1.0	nt	<0.2	nt	**2.2**	**2.5**	**6.6**	**6.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<5.0	**2.3**	**2.9**	**2.5**	**2.4**	**2.0**	**0.5**
15D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
16A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
16C	nt	**12**	nt	**6.3**	nt	<0.2	nt	**10**	**8.9**	**7.9**	**8.8**	**6.3**	**5.6**	**3.4**	**2.8**	**3.2**	**2.5**	**4.2**	**3.8**	**2.8**	**2.1**	**1.2**	**1.3**	**1.2**	**1.1**	**0.3**
17A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2.0
17C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18C	nt	<1.0	nt	<1.0	nt	<0.2	nt	**0.2**	<1.0	**0.2**	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nt	**2.9**	nt	**1.6**	nt	**1.5**	nt	**1.8**	**1.3**	**2.5**	**2.7**	**2.0**	**2.3**	**1.8**	**1.4**	**1.8**	**2.1**	**1.5**	<2.0	<5.0	<2.0	<2.0	**0.7**	**1.0**	**0.9**	**0.3**
20D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
22A	**3.2**	**2.2**	**3.3**	**1.7**	**2.4**	**2.4**	**2.3**	**2.7**	**1.3**	**1.9**	**3.1**	**2.5**	**1.8**	**1.7**	**2.7**	**2.2**	**1.7**	**2.0**	**1.8**	**2.0**	**1.7**	**1.6**	**1.5**	**1.5**	**1.5**	<0.2
23A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

µg/L = micrograms per liter
nd = Not Detected.
nt = Not Tested.

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

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

BENZENE (µg/L)

	Jan-94	May-95	Oct-95	Feb-96	May-96	Aug-96	Nov-96	Feb-97	May-97	Aug-97	Nov-97	Jun-98	Oct-98	Jun-99	Nov-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Nov-03	May-04	Aug-04	Oct-04	Feb-05	Mar-05	May-05
06A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0	<1.0	<1.0	nt	<1.0
06B	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.3**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<2.0
06C	nd	**8.64**	**230.09**	**29.96**	**13.7**	**5.6**	**2.9**	**3.4**	**4.6**	**4.1**	**4.2**	**4.2**	**5.7**	**2.8**	**2.7**	<1.00	**2.76**	**1.94**	**1.7**	<1.0	<1.0	<1.0	**2.2**	<1.0	<1.0	**1.9**	**1.2**	nt	**1.7**
08C	nd	**225.74**	**135.58**	**104.73**	**104.6**	**31.8**	**121**	**27.5**	**6.1**	<4.00	<4.00	13.6	<5.00	<1.00	<2.00	**15.8**	<2.00	<1.00	<1.0	**5.4**	**4.4**	<3.0	<5.0	**2.0**	nt	**1.3**	nt	nt	<1.0
09A	nd	<1.00	<5.00	<500.00	<50.00	<3.33	<10.00	<4.00	<5.00	<1.00	<4.00	<1.00	<10.00	<1.00	<10.00	<10.00	<5.00	<1.00	<1.0	<1.0	<1.0	<15	<20	<20	<3.0	<5.0	<10	nt	<1.0
09B	nd	**19.76**	<33.30	<50.00	<10.00	**2.5**	<1.00	<1.00	**7.5**	**3.1**	**3.3**	<3.33	<10.00	<2.00	<2.00	<2.00	<2.00	<1.00	**1.2**	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<5.0	<10	nt	<1.0
09C	nd	<1.00	<5.00	<10.00	<1.00	**9.6**	**2.4**	**6.3**	**9.3**	**4.8**	**3.6**	**1.7**	**2.5**	**1.7**	<1.00	**1.5**	**1.36**	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0
09D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
10A	nd	<1.00	<5.00	<50.00	<10.00	<1.00	<3.33	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0
10C	nd	1.15	<5.00	<5.00	**1.33**	**1.4**	**1.4**	**1.5**	**1.4**	**1.2**	**1.3**	**1.3**	**1.1**	**1.1**	<1.00	**1.4**	**1.23**	<1.00	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
11A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
12A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
13A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
13C	nd	**4.88**	**69.66**	**33.56**	**25.76**	**75**	**34.1**	**36.5**	**20.5**	**7.6**	**6.8**	**3.9**	**3.3**	**3**	<1.00	**2**	**2.31**	**1.16**	<1.0	<1.0	**3.6**	**6.9**	**2.7**	**4.2**	nt	**1.3**	nt	nt	**1.9**
14A	nd	<1.00	<5.00	<20.00	<1.00	<10.00	<5.00	<4.00	<2.00	<2.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	nt	<10
14C	nd	<1.00	<5.00	<5.00	**26.44**	**22**	**11.7**	<10.00	<10.00	<10.00	**4.3**	**2.8**	**4.64**	**2.5**	**1.2**	**1.4**	**1.33**	<1.00	<1.0	<1.0	**1.1**	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
14E	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15A	nd	<1.00	<5.00	<5.00	<5.00	<2.00	<1.00	<4.00	<2.00	<1.00	<2.00	<3.33	<10.00	<1.00	<10.00	<10.00	<10.00	<1.00	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
15C	nd	<1.00	<33.30	<5.00	<1.00	<3.33	<1.00	<2.00	<10.00	<10.00	<10.00	<3.33	**5.2**	**5.2**	**5.4**	<1.00	**4.28**	**2.92**	**3.2**	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
15D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
16A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**2**	<1.00	**10.9**	**49.8**	**1.6**	**46.03**	**33.88**	**15**	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
16C	nd	<1.00	<5.00	<10.00	<1.00	**3.3**	**31.2**	**11.3**	**14.4**	**18.8**	**1.7**	**15**	**8.3**	**10**	**6.4**	**7.8**	**4.33**	**4.99**	**4.5**	**1.7**	**2.6**	**1.2**	**2.8**	<1.0	nt	**1.0**	nt	nt	<1.0
17A	nd	<1.00	<5.00	<5.00	<1.00	**78.8**	**2.7**	<1.00	<1.00	<1.00	<1.00	**11.2**	<1.00	<1.00	<1.00	**1.5**	<1.00	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	nt
17C	nd	**142.64**	**73.23**	**34.26**	**92.46**	**40.6**	**22.5**	**36.6**	**4.7**	**21.8**	**8.53**	**5.6**	**2.7**	**3.7**	**2.4**	**2.1**	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	nt	nt	nt
18C	**14**	**8.77**	**5.28 J**	<5.00	**5.79**	**5.4**	**3.1**	**3.6**	**4**	**2.9**	**2.7**	**1.5**	**1.4**	**1.5**	<1.00	**1.1**	**1.26**	<1.00	<1.0	<1.0	<1.0	**2.2**	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
18D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	**1.1**	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<1.0	nt	nt	<1.0	nt	<1.0
19C	**61**	**17.57**	**13.44**	**7.14 J**	**10.46**	**6.8**	**5.6**	**6.8**	**6.2**	**3.4**	**2.9**	**2.2**	**1.8**	**1.8**	**1.3**	**1.2**	**1.43**	**1.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
19D	**3.9**	**3.60**	<5.00	<5.00	**2.42**	**2.2**	**1.6**	**1.9**	**1.7**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nd	<1.00	<5.00	<5.00	<1.00	**1.1**	<1.00	**1.1**	**1.1**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	**1.1**	<1.0	<1.0	nt	<1.0	nt	nt	<1.0
20D	nd	<1.00	<5.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	<1.00		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt
22A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0
23A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.0	<1.0

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

BENZENE (µg/L)

	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	Apr-15	Oct-15	Apr-16
06A	<1.0	<1.0	<1.0	<1.0	<1.0	**0.4**	<1.0	<1.0	**0.3**	<1.0	<1.0	<4.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	nt
06B	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	nt
06C	**1.9**	**1.9**	**1.3**	**1.3**	**1.2**	**1.2**	<1.0	<1.0	**0.9**	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
08C	nt	<1.0	nt	<10	nt	<5.0	nt	<3.0	<5.0	<5.0	<5.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<10	<5.0	<1.0	<1.0	<2.0	<0.2	<0.2	<2.0	<2.0	<2.0	<2.0	<0.2	<0.2	<0.2	nt
09B	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09C	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<3.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
10A	<1.0	<1.0	<1.0	<1.0	<1.0	**0.3**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<0.2	nt	nt	nt
10C	nt	<1.0	nt	<1.0	nt	**0.2**	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	nt
11A	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<2.0	<2.0	<2.0	<0.2	<0.2	<0.2	nt
12A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	nt	nt	nt
13A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	nt
13C	nt	**3.0**	nt	**2.1**	nt	**2.1**	nt	**1.2**	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	nt
14A	<10	<3.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	nt	nt	nt
14C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<2.0	<2.0	<1.0	<0.2	<0.2	<0.2	nt
14E	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
15A	nt	<5.0	nt	<5.0	nt	<3.0	nt	<1.0	<1.0	<3.0	<1.0	<3.0	<1.0	<1.0	<1.0	<10	**0.4**	<1.0	**0.4**	<0.5	**0.3**	**0.3**	**0.2**	nt	nt	nt
15C	nt	<1.0	nt	<1.0	nt	**0.4**	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<2.0	<5.0	<2.0	<2.0	<0.2	<0.2	<0.2	nt
15D	nt	<1.0	nt	<1.0	nt	<1.0	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
16A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	nt
16C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	**0.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	nt
17A	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	nt
17C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<0.2	<1.0	<0.2	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18D	nt	nt	nt		nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19C	nt	<1.0	nt	<1.0	nt	<0.2	nt	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nt	<1.0	nt	<1.0	nt	**0.5**	nt	**0.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.4**	<2.0	<5.0	<2.0	<2.0	**0.2**	**0.2**	<0.2	nt
20D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
22A	<1.0	<1.0	<1.0	<1.0	<1.0	**0.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**0.2**	**0.4**	**0.4**	**0.5**	**0.3**	**0.4**	**0.5**	**0.3**	**0.3**	nt
23A	<1.0	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0	<1.0	**0.2**	<1.0	<1.0	<1.0	<1.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

µg/L = micrograms per liter
nd = Not Detected.
nt = Not Tested.

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

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

NAPHTHALENE (µg/L)

	Jan-94	May-95	Oct-95	Feb-96	May-96	Aug-96	Nov-96	Feb-97	May-97	Aug-97	Nov-97	Jun-98	Oct-98	Jun-99	Nov-99	Jun-00	Dec-00	Jun-01	Dec-01	Jun-02	Dec-02	Jun-03	Nov-03	May-04	Aug-04	Oct-04	Feb-05	Mar-05	May-05
06A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<5.0	<5.0	<5.0	<5.0	nt	<5.0
06B	nt	nt	nt	nt	<1.00	**2.8**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.4**	<1.00	<1.00	<1.00	<1.00	**4.5**	**1.8**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<10
06C	nt	nt	nt	nt	**29.26**	**10.4**	**9.1**	**8.8**	**7.2**	<1.00	**18.4**	**3**	**25.1**	**3.4**	<1.00	**7.7**	**44.97**	**9.73**	**2.8**	<5.0	<5.0	<5.0	**220**	**14**	<5.0	<5.0	<5.0	nt	<5.0
08C	nt	nt	nt	nt	**351.9**	**401**	**155**	**370**	**234**	**118**	**292**	**600 E**	**38.6**	**230**	**137**	**109.2**	**174.1**	**125**	**210**	**180 J**	**290**	**390**	**300**	**130**	nt	**180**	nt	nt	**130**
09A	nt	nt	nt	nt	<50.00	<3.33	<10.00	<4.00	<5.00	<1.00	**7**	<1.00	<10.00	<1.00	<10.00	<10.00	**8.65**	**3.63**	<1.0	<5.0	<5.0	<75	<100	<100	<15	<25	<50	nt	<5.0
09B	nt	nt	nt	nt	<10.00	<2.00	<1.00	<1.00	**13.8**	**22.4**	<2.00	<3.33	<10.00	**3.4**	**4.6**	<2.00	**11.2**	**2.24**	**3.1**	<5.0	<5.0	<5.0	<5.0	<15	<25	<25	<50	nt	<5.0
09C	nt	nt	nt	nt	<1.00	**1.2**	<1.00	**8.8**	**6.5**	<1.00	**25**	<1.00	<1.00	**9.9**	**6.8**	<1.00	**1.67**	**1.8**	**1.3**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**7.7**	**68**	nt	**51**
09D	nt	nt	nt	nt	<1.00	**1.3**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
10A	nt	nt	nt	nt	<10.00	**4.2**	<3.33	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0
10C	nt	nt	nt	nt	**14.27**	**30.5**	**6.3**	**56.1**	**6.4**	**7.6**	**5.8**	**2.8**	<1.00	**3.8**	**4.7**	**2.7**	**5.77**	<1.00	**36**	**5.0**	<5.0	<5.0	<5.0	**9.4**	nt	<5.0	nt	nt	<5.0
11A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**5.1**	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
12A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
13A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
13C	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
14A	nt	nt	nt	nt	<1.00	<10.00	<5.00	<4.00	<2.00	<2.00	<2.00	<1.00	<1.00	**150**	**4.8**	**235**	**113.23**	**84.7**	**35**	**5.7**	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<25	nt	<50
14C	nt	nt	nt	nt	<2.00	<10.00	<1.00	<10.00	<10.00	<10.00	**11.8**	**7.2**	**6.5**	**6.3**	**7.3**	**17.2**	**8.7**	**6.79**	**3.5**	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
14E	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
15A	nt	nt	nt	nt	**423.67**	**239**	**152**	**247**	**136**	**67.3**	**465 E**	**1721 E**	**916**	**58.9**	**561**	**797**	**695.6**	**985.5**	**1100**	**840 J**	**510**	**370**	**490**	**700**	nt	**430**	nt	nt	**440**
15C	nt	nt	nt	nt	<1.00	**1**	<1.00	**4.4**	<10.00	<10.00	<10.00	<3.33	**4.8**	<2.00	<2.00	**29.8**	<1.00	<1.00	<1.0	<5.0 J	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
15D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**7.4**	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
16A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**3.1**	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
16C	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
17A	nt	nt	nt	nt	<1.00	**62**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	nt
17C	nt	nt	nt	nt	<1.00	<1.00	**26.6**	<1.00	**0.6**	**37.3**	**106**	<1.00	<1.00	**31.9**	**16.6**	**13.7**	nt	**12.12**	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	<5.0	nt	nt	nt	nt	nt
18C	nt	nt	nt	nt	<1.00	<1.00	<1.00	**1.7**	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.1**	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
18D	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.54**	nt	nt	nt	nt	nt	<5.0	nt	nt	<5.0	nt	<5.0
19C	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
19D	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**5.48**	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	**1.81**	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	<5.0	nt	nt	<5.0
20D	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**207.4**	<1.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt
22A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**9.9**	**140**
23A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	**19**	**130**

SWMU-20 ANALYTICAL RESULTS SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
JANUARY 1994 THROUGH PRESENT

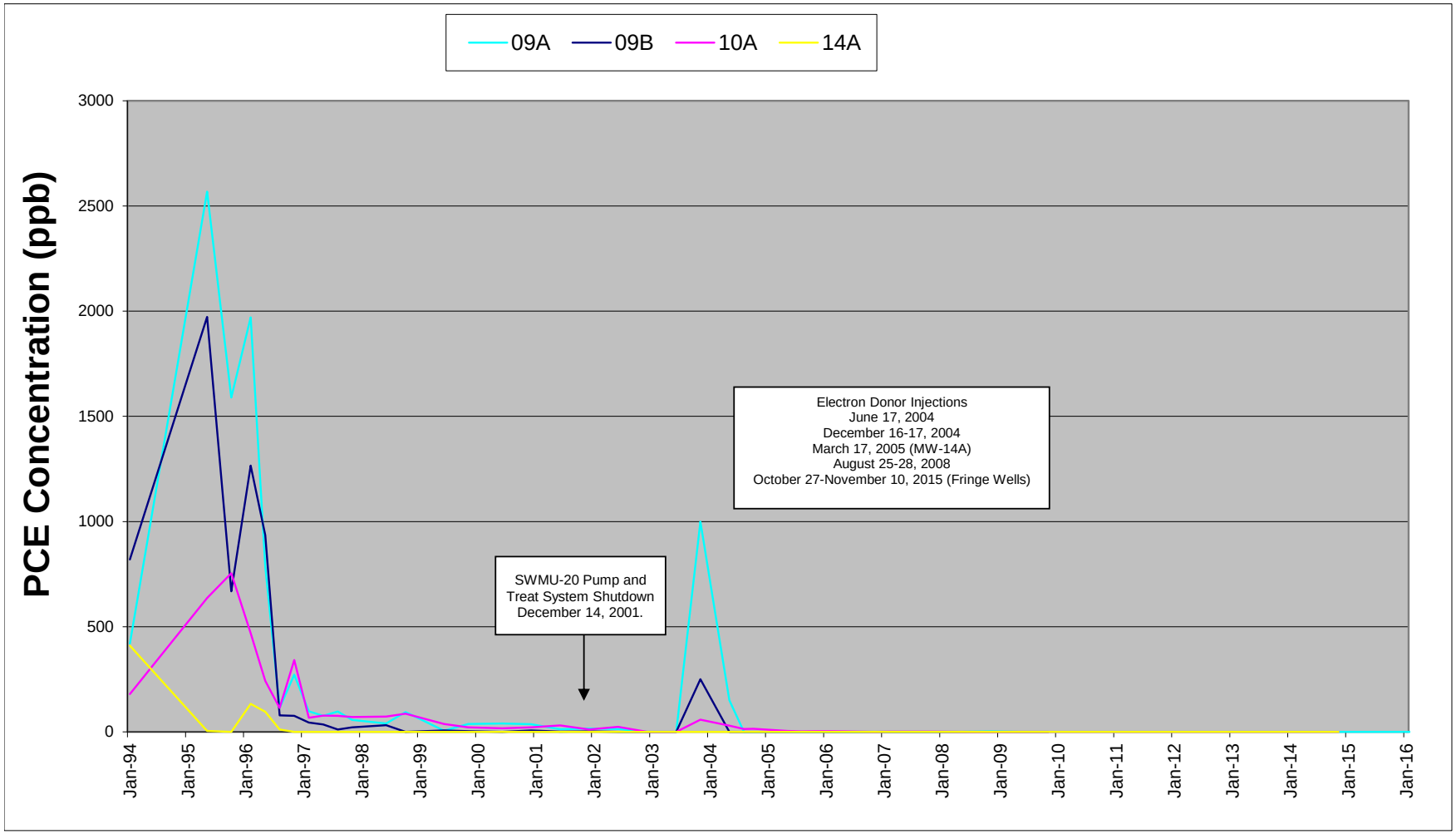
NAPHTHALENE (µg/L)

	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	Apr-15	Oct-15	Apr-16
06A	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<5.0	<5.0	<0.5	<5.0	<5.0	<20	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	nt
06B	<5.0	<5.0	<5.0	<5.0	<5.0	**0.6**	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	nt
06C	<5.0	<5.0	<5.0	<5.0	<5.0	**5.0**	<5.0	<5.0	**4.6**	<5.0	<5.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
08C	nt	**82**	nt	**910**	nt	**440**	nt	**500**	**540**	**180**	**1100**	**62**	**65**	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09A	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<0.5	<5.0	<50	<25	<5.0	<5.0	<5.0	**5.3**	**9.5**	**7.5**	**56**	**23**	**9.9**	**8.7**	**2.6**	**1.8**	nt
09B	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	**0.6**	<5.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09C	**29**	**12**	**5.1**	<5.0	<5.0	**14**	**18**	**5.5**	<5.0	**6.7**	<5.0	**56**	**69**	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
09D	nt	<5.0	nt	<5.0	nt	<2.5	nt	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
10A	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	<0.5	nt	nt	nt
10C	nt	<5.0	nt	<5.0	nt	<0.5	nt	<5.0	<5.0	<0.5	<5.0	**100**	39	12	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**10**	<0.5	nt
11A	nt	<5.0	nt	<5.0	nt	<5.0	nt	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	nt
12A	nt	<5.0	nt	<5.0	nt	<0.5	nt	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	nt	nt	nt
13A	nt	<5.0	nt	<5.0	nt	<0.5	nt	<0.5	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	nt
13C	nt	<5.0	nt	<5.0	nt	**16**	nt	**16**	<5.0	**0.5**	<5.0	<5.0	**<5.0**	22	**6.5**	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<2.5	<0.5	**3.3**	<0.5	nt
14A	<50	<15	<5.0	<10	<5.0	**7.0**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**0.5**	<0.5	**0.8**	<0.5	**0.7**	<0.5	<0.5	nt	nt	nt
14C	nt	<5.0	nt	<5.0	nt	**6.3**	nt	**6.2**	<5.0	<5.0	<5.0	<5.0	**<5.0**	15	<5.0	<5.0	<0.5	<0.5	<5.0	<5.0	<5.0	<2.5	<0.5	<0.5	<0.5	nt
14E	nt	<5.0	nt	<5.0	nt	<0.5	nt	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
15A	nt	**390**	nt	**220**	nt	**180**	nt	**72**	**170**	**180**	**230**	**170**	**190**	**310**	**240**	**210**	**190**	**170**	**120**	**84**	**180**	**89**	**190**	nt	nt	nt
15C	nt	<5.0	nt	<5.0	nt	<0.5	nt	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	nt
15D	nt	<5.0	nt	<5.0	nt	<2.5	nt	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
16A	nt	<5.0	nt	<5.0	nt	<0.5	nt	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	nt
16C	nt	<5.0	nt	<5.0	nt	<0.5	nt	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	nt
17A	nt	<5.0	nt	<5.0	nt	<0.5	nt	<0.5	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	nt
17C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
17D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18C	nt	<5.0	nt	<5.0	nt	<0.5	nt	**0.6**	<5.0	<0.5	**86**	**47**	**<5.0**	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
18D	nt	nt	nt		nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19A	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19C	nt	<5.0	nt	<5.0	nt	**0.5**	nt	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
19D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
20C	nt	<5.0	nt	<5.0	nt	**0.8**	nt	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<5.0	<5.0	<5.0	<5.0	<0.5	<0.5	<0.5	nt
20D	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21A	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
21C	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
22A	**180**	**170**	**210 J**	**120**	**200**	**140**	**110**	**100**	**25**	**41**	**32**	**51**	**15**	**14**	**16**	**20**	**12**	**15**	**9.2**	**11**	**7.1**	**9.8**	**6.5**	**6.2**	**4.7**	nt
23A	**100**	<5.0	**45**	**69**	**140**	**9.0**	**26**	**36**	**6.1**	**5.3**	<5.0	**9.8**	**<5.0**	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

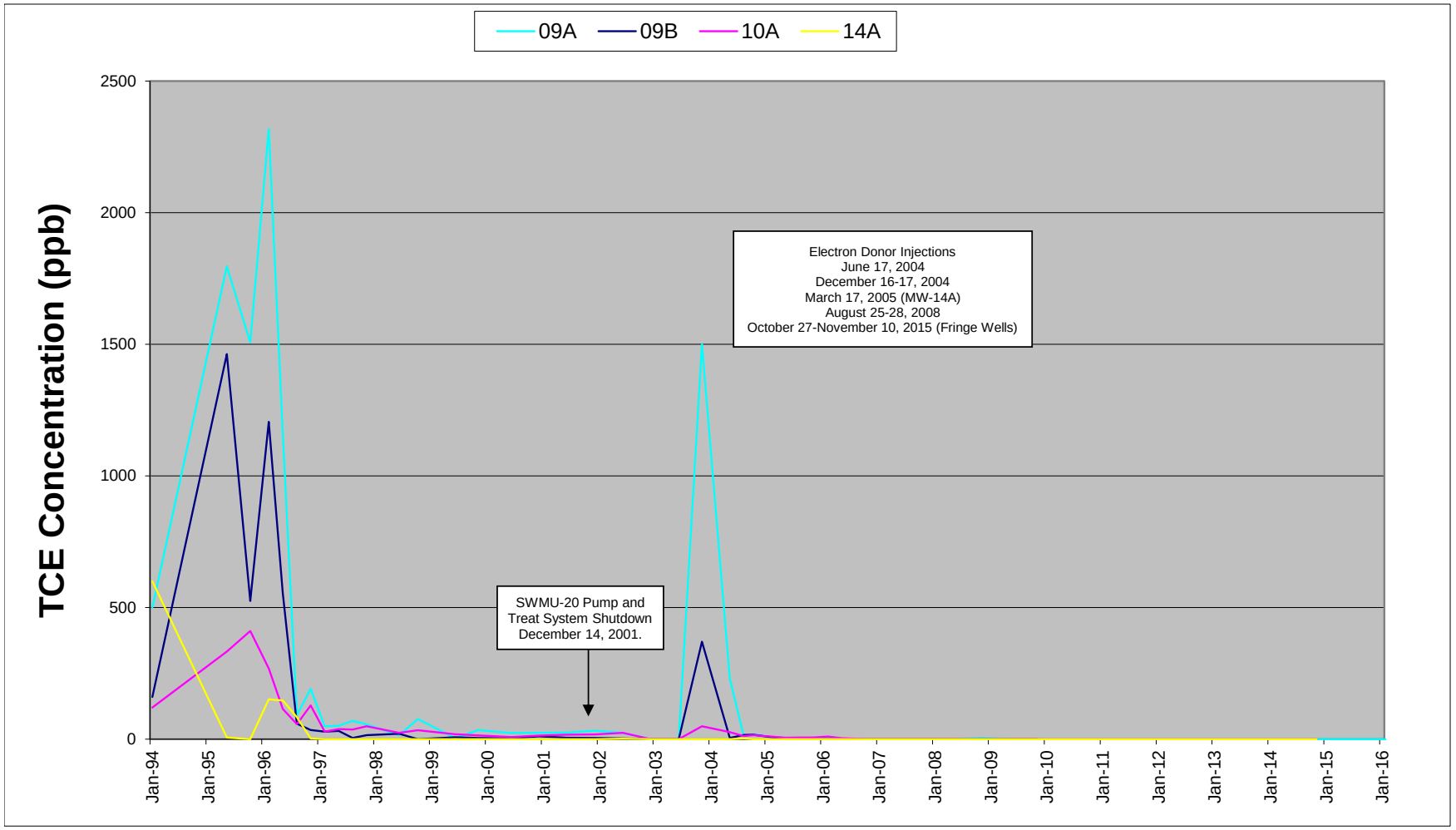
µg/L = micrograms per liter
nd = Not Detected.
nt = Not Tested.

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

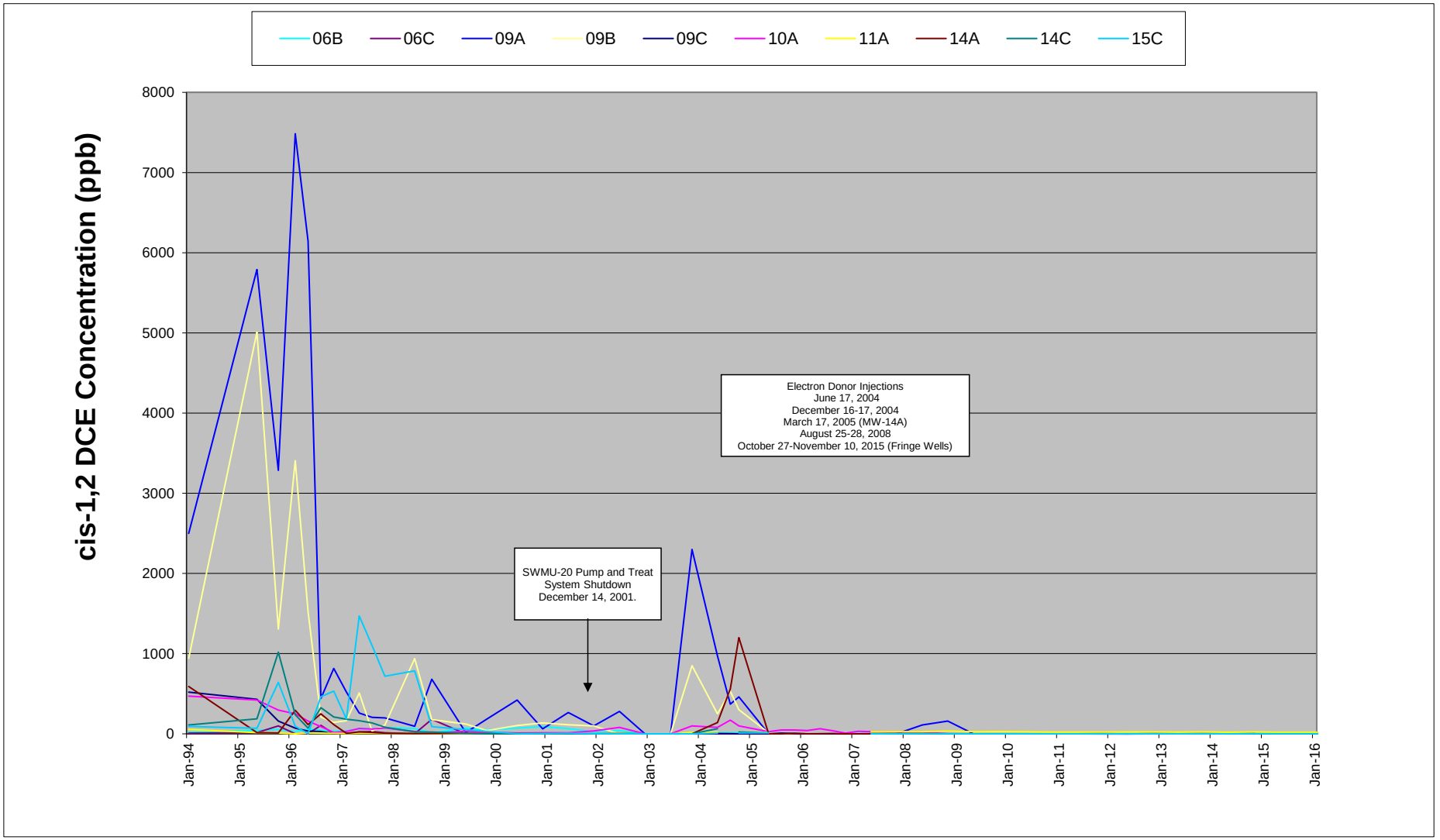
DEVELOPMENTAL CENTER WELLS
TETRACHLOROETHENE CONCENTRATIONS
(Wells with PCE Historically Detected over 50 ppb)



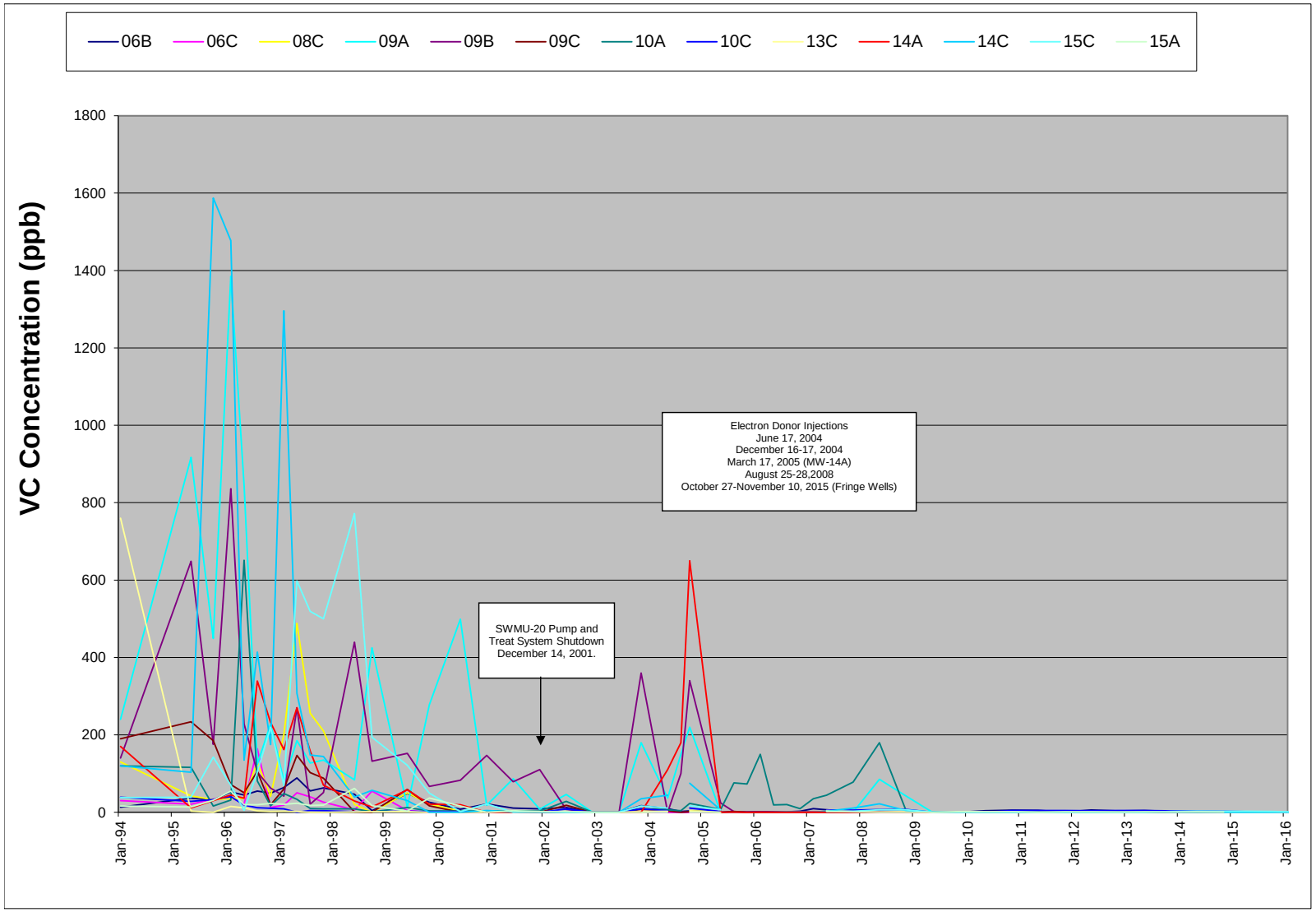
DEVELOPMENTAL CENTER WELLS
TRICHLOROETHENE CONCENTRATIONS
(Wells with TCE Historically Detected over 50 ppb)



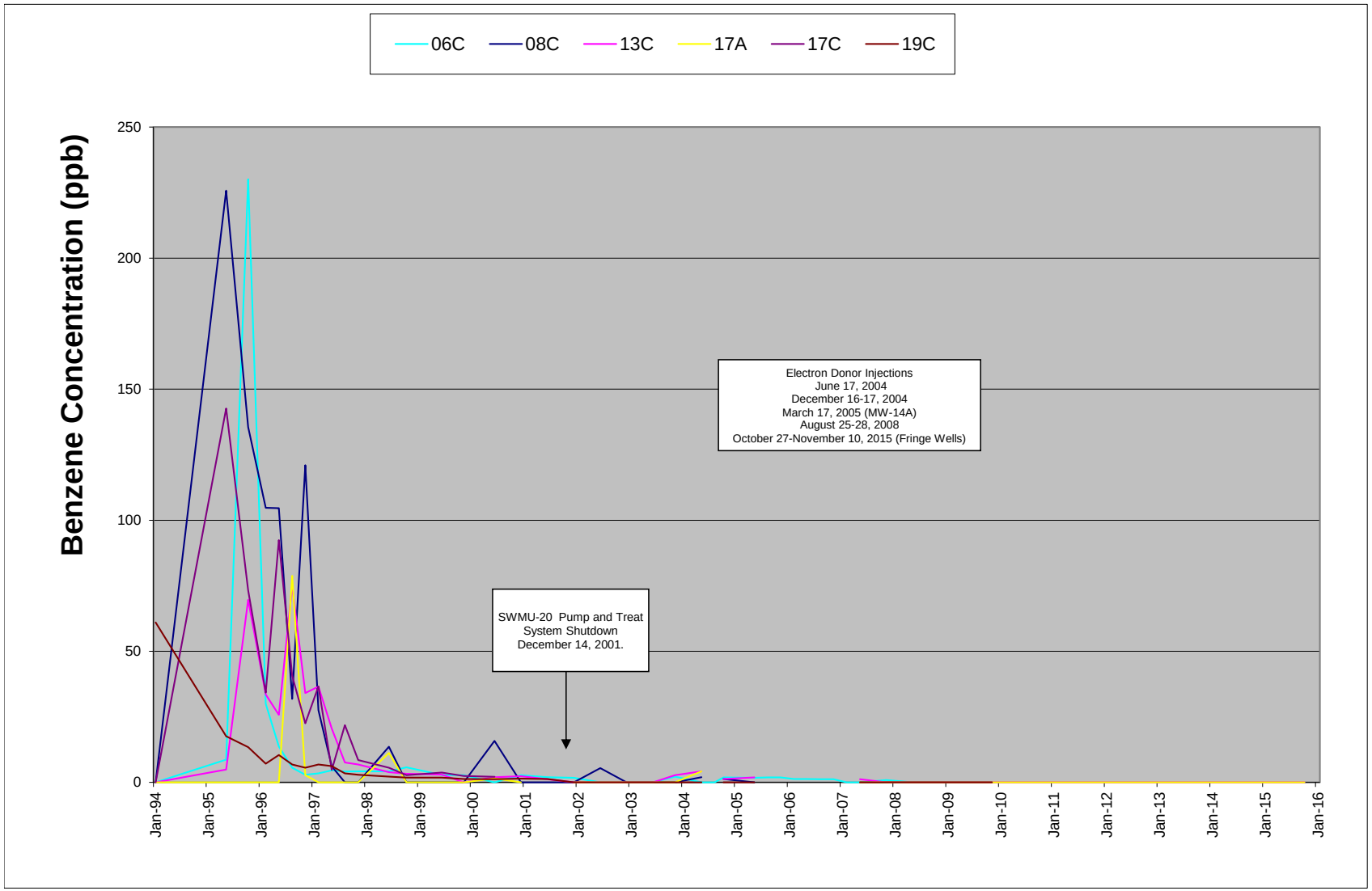
DEVELOPMENTAL CENTER WELLS
CIS-1,2 DICHLOROETHENE CONCENTRATIONS
(Wells with cis-1,2 DCE Historically Detected over 50 ppb)



DEVELOPMENTAL CENTER WELLS
VINYL CHLORIDE CONCENTRATIONS
(Wells with VC Historically Detected over 50 ppb)



DEVELOPMENTAL CENTER WELLS
BENZENE CONCENTRATIONS
(Wells with Benzene Historically Detected over 50 ppb)



SWMU-20 CLEANUP ACTION SUMMARY - SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		
							Proposed Groundwater Cleanup Levels (d)													
							5.3	1.4	134	2.4	---	---								
Well	Date	1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	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)	Notes
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	Hazy brown
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	Clear, with yellow tint
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	cola brown
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	Clear, yellow tint
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	Yellow-brown tint (nearly clear)
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	Yellow tint
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	Clear, yellow-brown tint
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	Clear, with yellow tint
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	---

SWMU-20 CLEANUP ACTION SUMMARY - SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		
							Proposed Groundwater Cleanup Levels (d)													
							5.3	1.4	134	2.4	---	---								
		1st	2nd	3rd (b)	4th	5th	PCE	TCE	cDCE	VC	Ethene	Ethane	DO	ORP	Iron II	Sulfate	Methane	pH	TOC	
Well	Date	Injection	Injection	Injection	Injection	Injection	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mV)	mg/L	(mg/L)	(µg/L)		(mg/L)	Notes
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	---
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	White froth on surface of purge water
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	Yellow tint
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	Clear, with yellow tint
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	Clear, with yellow tint
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	Clear, yellow tint
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	Clear with black tint, H2S odor
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	Clear, slightly yellow tint
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	Hazy, yellow color
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	Hazy, yellow-brown tint
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	Clear, yellow-brown tint
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	---

SWMU-20 CLEANUP ACTION SUMMARY - SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		
							Proposed Groundwater Cleanup Levels (d)													
							5.3	1.4	134	2.4	---	---								
Well	Date	1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	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)	Notes
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	---
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	Duffy: Interference w/DO sensor?
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	---
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	Clear, yellow tint
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	Clear, yellow-brown tint, H2S odor
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	Clear with yellow color
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	Hazy, tan brown color
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	Hazy, yellow-brown tint
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	Clear, with yellow-brown tint
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	---
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	Clear, yellow tint
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	Clear, H2S odor
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	Near clear, yellow tint
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	Clear with yellow tint
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	Yellow-brown tint
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	---

SWMU-20 CLEANUP ACTION SUMMARY - SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		
							Proposed Groundwater Cleanup Levels (d)													
							5.3	1.4	134	2.4	---	---								
Well	Date	1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	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)	Notes
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	Clear, yellow tint
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	Clear, black tint
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	Clear
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	Clear, yellow color
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	Clear, yellow-brown tint
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	Clear, with yellow-brown tint
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	---
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	Duffy: Replace DO electrolic membrane
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	Clear, yellow tint
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	Clear, yellow tint
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	Clear, yellow-brown
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	---

SWMU-20 CLEANUP ACTION SUMMARY - SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		
							Proposed Groundwater Cleanup Levels (d)													
							5.3	1.4	134	2.4	---	---								
Well	Date	1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	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)	Notes
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	---
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	Clear, colorless
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	Clear, colorless

SWMU-20 CLEANUP ACTION SUMMARY - SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		
							Proposed Groundwater Cleanup Levels (d)													
							5.3	1.4	134	2.4	---	---								
Well	Date	1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	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)	Notes
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	---
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	Hazy, suspended silt
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	Clear, slight yellow-brown tint
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	---
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	Slight yellow tint
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	---

SWMU-20 CLEANUP ACTION SUMMARY - SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		
							Proposed Groundwater Cleanup Levels (d)													
							5.3	1.4	134	2.4	---	---								
Well	Date	1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	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)	Notes
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	---

PCE = Tetrachloroethene
TCE = Trichloroethene
cDCE = cis-1,2-Dichloroethene
VC = Vinyl Chloride
DO = Dissolved Oxygen
ORP = Oxidation Reduction Potential
TOC = Total Organic Carbon

Bold = Detect
µg/L = micrograms pr liter
mg/L = milligrams per liter
mV = millivolts
NA = Not analyzed
Box = Exceedance of proposed CUL

(a) Injections occurred on:

-6/17/04 (6A, B, C; 9A, B, C)	6/17/2004	for elapsed time relative to injection
-12/16-17/04 (6A, 6B;9A,9B)	12/16/2004	for elapsed time relative to injection
-3/17/05 (14A)	3/17/2005	for elapsed time relative to injection
-8/25-28/08 (6A, 9A, 10A)	8/25/2008	for elapsed time relative to injection
-10/27-11/11/15 (6A, 6B, 10C, 15C, 16A, 16C, 17A, 20C, 22A)	11/11/2015	for elapsed time relative to injection

(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).

SWMU-20 CLEANUP ACTION SUMMARY - NON SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

Well	Date	Elapsed Time from Injections (a) (days) 1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Volatile Organic Compounds Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
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

SWMU-20 CLEANUP ACTION SUMMARY - NON SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

Well	Date	Elapsed Time from Injections (a) (days) 1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) PCE (µg/L) 5.3	TCE (µg/L) 1.4	cDCE (µg/L) 134	VC (µg/L) 2.4
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-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
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

SWMU-20 CLEANUP ACTION SUMMARY - NON SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

Well	Date	Elapsed Time from Injections (a) (days) 1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) PCE (µg/L) 5.3	TCE (µg/L) 1.4	cDCE (µg/L) 134	VC (µg/L) 2.4
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-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
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-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**

SWMU-20 CLEANUP ACTION SUMMARY - NON SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

Well	Date	Elapsed Time from Injections (a) (days) 1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Volatile Organic Compounds Proposed Groundwater Cleanup Levels (c) 5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
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-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**

SWMU-20 CLEANUP ACTION SUMMARY - NON SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

Well	Date	Elapsed Time from Injections (a) (days) 1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) PCE 5.3 (µg/L)	TCE 1.4 (µg/L)	cDCE 134 (µg/L)	VC 2.4 (µg/L)
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-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
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-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**

SWMU-20 CLEANUP ACTION SUMMARY - NON SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

Well	Date	Elapsed Time from Injections (a) (days) 1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) PCE (µg/L) 5.3	TCE (µg/L) 1.4	cDCE (µg/L) 134	VC (µg/L) 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-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-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**

SWMU-20 CLEANUP ACTION SUMMARY - NON SOURCE ZONE
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

Well	Date	Elapsed Time from Injections (a) (days) 1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Volatile Organic Compounds — Proposed Groundwater Cleanup Levels (c) PCE (µg/L) 5.3	TCE (µg/L) 1.4	cDCE (µg/L) 134	VC (µg/L) 2.4
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**

PCE = Tetrachloroethene
TCE = Trichloroethene
cDCE = cis-1,2-Dichloroethene
VC = Vinyl Chloride
µg/L - micrograms per liter
Bold = Detect

(a) Injections occurred on:

6/17/04 (6A, B, C; 9A, B, C)	6/17/2004 for elapsed time relative to injection
12/16-17/04 (6A, 6B;9A,9B)	12/16/2004 for elapsed time relative to injection
3/17/05 (14A)	3/17/2005 for elapsed time relative to injection
8/25-28/08 (6A, 9A, 10A)	8/25/2008 for elapsed time relative to injection
	11/11/2015 for elapsed time relative to injection

(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).

Box = Exceedance of proposed CUL

DEVELOPMENTAL CENTER

GROUNDWATER MONITORING

APRIL 2016

SWMU-17 VOA/METALS/CONVENTIONALS DATA TABLES

SWMU-17 CLEANUP ACTION SUMMARY

SWMU-17 REMEDIAL ACTION INJECTION AND MONITORING WELLS

SWMU-17 VOA/METALS/CONVENTIONALS DATA
DEVELOPMENTAL CENTER GROUNDWATER MONITORING
APRIL 2016

Sample Name:	BDC-05-02	BDC-05-03	BDC-05-04	BDC-05-05	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-05-21-Dup	BDC-05-22	BDC-05-23	BDC-05-24	BDC-05-24-Dup	Trip Blank
LLI SDG:	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597	1653597
LLI Sample ID:	8347371	8347341	8347413	8347419	8347365	8347407	8347359	8347353	8347347	8347335	8347323	8347311	8347305	8347293	8347287	8347299	8347329	8347401	8347389	8347425	8347395	8347383	8347317	8347377	8347431
Sample Date:	04/20/2016	04/20/2016	04/21/2016	04/21/2016	04/20/2016	04/21/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/20/2016	04/21/2016	04/21/2016	04/21/2016	04/21/2016	04/21/2016	04/20/2016	04/20/2016		
Test ID: VOA SW8260C (µg/L)																									
Vinyl Chloride	0.6	0.2 U	0.2 U	0.2 U	3.2	1.2	2.8	1.8	1.4	0.4	2.0	0.9	1.1	1.3	1	0.2 U	0.6	6.8	2.4	2.4	0.2 U	1.4	0.7 J	1.0 J	0.2 U
cis-1,2-Dichloroethene	0.8	0.2 U	0.4	0.2 U	0.2	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.2 U	1	0.2 U	0.3	1.7	1.7	7.3	4.0	0.5	0.6	0.2 U
Trichloroethene	1.4	0.2	0.3	0.6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	3.0	0.2 U	0.2 U	0.2 U	0.2 U	0.9	0.2 U	0.2	0.2	0.2 U
Tetrachloroethene	4.2	1.2	1.0	0.3	0.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Test ID: Total Metals (mg/L)																									
Arsenic (EPA 200.8)	0.0049	0.0019 J	0.0020	0.00081 J	0.0031	0.0135	0.0073	0.0153	0.0199	0.0158	0.0257	0.0157	0.0570	0.0423	0.0421	0.0026	0.0249	0.0338	0.0156	0.0173	0.0345	0.0243	0.0041	0.0043	
Copper (EPA 200.8)	0.0083	0.0033	0.0042	0.0020 U	0.0020 U	0.0070	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0060	0.0029	0.0020 U	0.0028	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
Test ID: Dissolved Metals (mg/L)																									
Arsenic (EPA 200.8)	0.0022	0.0023	0.0013 J	0.00040 U	0.0030	0.0120	0.0088	0.0156	0.0202	0.0165	0.0238	0.0161	0.0507	0.0394	0.0364	0.0013 J	0.0206	0.0296	0.0164	0.0175	0.0340	0.0226	0.0023 J	0.0029 J	
Copper (EPA 200.8)	0.0036	0.0020 U	0.0029	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
Test ID: Conventionals (mg/L)																									
Sulfate (EPA 300.0)	14.5	6.5	12.2	13.4	2.0	0.30 U	0.30 U	0.65 J	0.30 U	0.30 U	0.30 U	3.1	0.30 U	0.30 U	0.30 U	8.5	0.36 J	0.30 U	1.1	1.0	22.4	3.0	1.3 J	0.89 J	
Total Organic Carbon (SM5310C)	13.6	1.4	2.4	1.0 U	3.8	3.8	2.8	5.0	6.5	14.3	7.6	22.3	27.6	17.7	29.0	1.0 U	21.3	16.2	12.7	13.3	6.0	6.3	4.6	4.2	
Test ID: Dissolved Gases; Mod RSK-175 (µg/L)																									
Methane	8800	2800			5400		6600	5800	13000	16000	10000	11000	18000	17000	19000	320	19000	8800	4600	4400			7500	7500	6.2
Ethane	4.4 J	1.0 U			1.0 U		8.4	11	2.6 J	4.3 J	2.0 J	1.7 J	12	9.0	6.6	1.0 U	3.4 J	2.5 J	1.0 U	1.0 U			1.8 J	2.0 J	1.0 U
Ethene	1.0 U	1.0 U			1.3 J		1.9 J	3.9 J	3.3 J	1.0 U	1.9 J	1.0 U	1.0 U	1.4 J	1.1 J	1.0 U	1.0 U	6.1	1.6 J	1.6 J			1.0 U	1.0 J	1.0 U
Acetylene	1.0 U	1.0 U			1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U

µg/L = micrograms per liter.
mg/L = milligrams per liter.
EPA = U.S. Environmental Protection Agency

U = Compound was analyzed for, but was not detected at the given detection limit.
J = Analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

GROUNDWATER DATA SUMMARY
BOEING DEVELOPMENTAL CENTER SWMU-17

		Pilot Injection	Full Injection #1	Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators			VOCs- micromoles/Liter (b)							Molar Fraction (c)				
		Elapsed Time From Injection	Elapsed Time From Injection	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Acetylene	As, Tot	As, Dis	Cu, Tot	Cu, Dis	DO	Nitrate	Iron II	Sulfate	Methane	ORP	TOC	pH													
		(days)	(days)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg-N/L)	(mg/L)	(mg/L)	(mg/L)	(mV)	(mg/L)													
Proposed Groundwater Cleanup Levels (a)				5.3	1.4	134	2.4	NA	NA	NA	0.008	0.008	0.008	0.008																				
Well	Date																						Comments	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Total Chloroethenes (d)	Ethene + Ethane	PCE	TCE	*c* DCE	VC	Ethene + Ethane
BDC-05-02	5/21/2007	-526		20	24	1.2	<1.0				0.003	0.002	0.004	<0.002										0.12	0.18	0.01	0.00			0.32		0.38	0.58	0.04	0.00	
(IW)	11/26/2007	-337		12	14	1.3	<1.0				0.001	<0.001	<0.002	<0.002										0.07	0.11	0.01	0.00			0.19		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										0.08	0.15	0.01	0.00			0.25		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		0.19	0.47	0.03	0.00	0.00	0.00	0.69	0.00	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		0.03	0.03	0.01	0.00	0.00	0.00	0.07	0.00	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		0.04	0.06	0.01	0.00	0.00	0.00	0.11	0.00	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		0.05	0.17	0.04	0.00	0.00	0.00	0.25	0.00	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		0.06	0.13	0.12	0.00	0.00	0.00	0.31	0.00	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		0.05	0.06	0.26	0.00	0.00	0.00	0.37	0.00	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		0.04	0.05	0.42	0.00	0.00	0.00	0.51	0.00	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		0.03	0.04	0.36	0.02	0.00	0.00	0.44	0.00	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	Black tint, black flakes, suspended solids	0.01	0.01	0.51	0.00	0.00	0.00	0.52	0.00	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	Black tint	0.01	0.00	0.72	0.00	0.00	0.00	0.73	0.00	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	0.56	0.00	0.00	0.00	0.56	0.00	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	0.01	0.33	0.00	0.00	0.00	0.34	0.00	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	0.24	0.00	0.00	0.00	0.24	0.00	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	0.14	0.00	0.00	0.00	0.14	0.00	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	0.13	0.00	0.00	0.00	0.13	0.00	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		0.00	0.01	0.23	0.00	0.00	0.00	0.24	0.00	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	0.10	0.00	0.00	0.00	0.10	0.00	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		0.05	0.04	1.55	0.03	0.00	0.00	1.66	0.00	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	2.27	0.00	0.00	0.00	2.27	0.00	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	1.86	0.00	0.00	0.00	1.86	0.00	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	0.59	0.00	0.00	0.00	0.59	0.00	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	0.33	0.09	0.00	0.00	0.42	0.00	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	0.01	0.04	0.05	0.00	0.06	0.05	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		0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.00	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		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	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		0.00	0.00	0.01	0.01	0.00	0.00	0.03	0.00	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		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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		0.00	0.01	0.02	0.04	0.18	0.00	0.07	0.18	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	0.07	1.43	0.37	0.07	1.79	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		0.01	0.01	0.02	0.01	0.00	0.40	0.05	0.40	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		0.01	0.00	0.02	0.03	0.00	0.16	0.06	0.16	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		0.02	0.01	0.01	0.05	0.11	0.21	0.09	0.32	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		0.01	0.01	0.01	0.01	0.00	0.37	0.04	0.37	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		0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.00	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		0.03	0.01	0.01	0.03	0.07	0.18	0.09	0.26	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		0.03	0.01	0.01	0.01	0.00	0.15	0.05	0.15	0.13	0.05	0.04	0.05	0.73
BDC-05-03	5/21/2007	-526		3.5	8.1	11	<1.0				0.003	<0.001	0.004	<0.002										0.02	0.06	0.11	0.00			0.20		0.11	0.31	0.58	0.00	
(MW 17 ft DG)	11/26/2007	-337		2.3	4.4	7.2	<1.0				0.002	<0.001	0.003	<0.002										0.01	0.03	0.07	0.00			0.12		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										0.02	0.06	0.13	0.00			0.22		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		0.03	0.06	0.18	0.00	0.00	0.00	0.26	0.00	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		0.01	0.02	0.03	0.00	0.00	0.00	0.05	0.00	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		0.01	0.03	0.06	0.00	0.00	0.00	0.10	0.00	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		0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.00	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		0.01	0.02	0.05	0.00	0.00	0.00	0.08	0.00	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		0.01	0.01	0.01	0.00	0.00	0.00	0.04	0.00	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		0.01	0.02	0.03	0.00	0.00	0.00	0.05	0.00	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		0.01	0.02	0.04	0.00	0.00	0.00	0.06	0.00	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		0.01	0.03	0.08	0.00	0.00	0.00	0.13	0.00	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		0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.00	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		0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.00	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		0.01	0.01	0.03	0.00	0.00	0.00	0.05	0.00	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		0.01	0.04	0.14	0.00	0.00	0.00	0.20	0.00	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		0.01	0.01	0.04	0.00	0.00	0.00	0.06	0.00	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		0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.00	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		0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.00	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		0.01	0.01	0.21	0.03			0.26		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		0.00	0.01	0.00	0.00			0.02		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	0.01			0.01		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		0.00	0.00	0.00	0.02			0.03		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		0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.00	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		0.01	0.01	0.00	0.00	0.00	0.04	0.01	0.04	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		0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	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		0.01	0.00	0.00	0.01	0.00	0.00	0.02	0.00	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		0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.04	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		0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.83	0.17	0.00	0.00	0.00

GROUNDWATER DATA SUMMARY
BOEING DEVELOPMENTAL CENTER SWMU-17

		Pilot Injection	Full Injection #1	Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators			VOCs- micromoles/Liter (b)								Molar Fraction (c)				
		Elapsed Time From Injection (days)	Elapsed Time From Injection (days)	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Acetylene	As, Tot	As, Dis	Cu, Tot	Cu, Dis	DO	Nitrate	Iron II	Sulfate	Methane	ORP	TOC	pH															
Proposed Groundwater Cleanup Levels (a)				(µg/L) 5.3	(µg/L) 1.4	(µg/L) 134	(µg/L) 2.4	(µg/L) NA	(µg/L) NA	(µg/L) NA	(mg/L) 0.008	(mg/L) 0.008	(mg/L) 0.008	(mg/L) 0.008	(mg/L)	(mg-N/L)	(mg/L)	(mg/L)	(mg/L)	(mV)	(mg/L)															
Well	Date																						Comments	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Total Chloroethenes (d)	Ethene + Ethane	PCE	TCE	*c* DCE	VC	Ethene + Ethane
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	0.01	0.00			0.01		0.00	0.00	1.00	0.00	
(MW 22 ft XG)	11/26/2007	-337		<1.0	<1.0	1.6	<1.0				0.009	<0.001	<0.002	<0.002										0.00	0.00	0.02	0.00			0.02		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										0.01	0.01	0.01	0.00			0.03		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		0.01	0.01	0.02	0.00	0.00	0.00	0.03	0.00	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		0.01	0.01	0.04	0.00	0.00	0.00	0.05	0.00	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	0.02	0.00	0.00	0.00	0.02	0.00	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	0.02	0.00	0.00	0.00	0.02	0.00	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		0.01	0.00	0.02	0.00	0.00	0.00	0.02	0.00	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		0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.00	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		0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	1.00	0.00	0.00	0.00	0.00
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	0.01	0.00	0.00	0.00	0.01	0.00	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		0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	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	0.01	0.00	0.00	0.00	0.01	0.00	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	0.01	0.00	0.00	0.00	0.01	0.00	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		0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.00	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	0.03	0.00	0.00	0.00	0.03	0.00	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	0.04	0.00	0.00	0.00	0.04	0.00	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	0.03	0.00	0.00	0.00	0.03	0.00	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		0.00	0.00	0.03	0.00	0.00	0.00	0.04	0.00	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	0.04	0.00			0.04		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		0.00	0.00	0.04	0.00			0.04		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	0.03	0.00			0.03		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	0.02	0.00			0.02		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	0.00	0.04	0.00			0.04		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		0.00	0.00	0.01	0.00			0.01		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		0.00	0.00	0.03	0.01			0.04		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		0.01	0.00	0.01	0.00			0.02		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	0.04	0.01			0.05		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		0.01	0.00	0.00	0.00			0.01		0.48	0.18	0.33	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			0.00		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			0.00		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										0.00	0.01	0.00	0.00			0.01		0.23	0.77	0.00	0.00	
BDC-05-05	10/23/2008	-5																						0.00	0.00	0.00	0.00			0.00		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		0.00	0.01	0.00	0.00			0.01		0.25	0.75	0.00	0.00	
BDC-05-05	12/16/2008	49																						0.00	0.00	0.00	0.00			0.00		0.00	0.00	0.00	0.00	
BDC-05-05	1/16/2009	80																						0.00	0.00	0.00	0.00			0.00		0.00	0.00	0.00	0.00	
BDC-05-05	2/11/2009	106																						0.00	0.00	0.00	0.00			0.00		0.00	0.00	0.00	0.00	
BDC-05-05	3/9/2009	132																						0.00	0.00	0.00	0.00			0.00		0.00	0.00	0.00	0.00	
BDC-05-05	4/16/2009	170																						0.00	0.00	0.00	0.00			0.00		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			0.00		0.00	0.00	0.00	0.00	
BDC-05-05	8/16/2009	292																						0.00	0.00	0.00	0.00			0.00		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			0.00		0.00	0.00	0.00	0.00	
BDC-05-05	2/16/2010	476																						0.00	0.00	0.00	0.00			0.00		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			0.00		0.00	0.00	0.00	0.00	
BDC-05-05	8/17/2010	658																						0.00	0.00	0.00	0.00			0.00		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	0.01	0.00	0.00			0.01		0.00	1.00	0.00	0.00	
BDC-05-05	2/15/2011	840																						0.00	0.00	0.00	0.00			0.00		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		0.00	0.01	0.00	0.00			0.01		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	0.01	0.00	0.00			0.01		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		0.00	0.01	0.00	0.00			0.01		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	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	1.00	0.00	0.00	0.00
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		0.00	0.01	0.00	0.00			0.01		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		0.00	0.01	0.00	0.00			0.01		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		0.00	0.01	0.00	0.00			0.01		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		0.00	0.01	0.00	0.00			0.01		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		0.00	0.01	0.00	0.00			0.01		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		0.00	0.01	0.00	0.00			0.01		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		0.00	0.00	0.00	0.00			0.01		0.28	0.72	0.00	0.00	
BDC-05-07	5/21/2007	-526		30	22	10	<1.0				0.003	<0.001	0.014	0.009										0.18	0.17	0.10	0.00			0.45		0.40	0.37	0.23	0.00	
(IW)	11/26/2007	-337		28	25	11	<1.0				<0.001	<0.001	0.011	0.002										0.17	0.19	0.11	0.00			0.47		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										0.20	0.24	0.09	0.00			0.54		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		0.13	0.18	0.14	0.00	0.00	0.00	0.46	0.00	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		0.10	0.13	0.05	0.00	0.00	0.00	0.28	0.00	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		0.10	0.19	0.07	0.00	0.00	0.00	0.36	0.00	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		0.12	0.18	0.07	0.00	0.00	0.00	0.36	0.00	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		0.14	0.21	0.10	0.00	0.00	0.00	0.45	0.00	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		0.12	0.16	0.09	0.00	0.00	0.00	0.37	0.00	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		0.12	0.16	0.11	0.00	0.00	0.00	0.39	0.00	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		0.07	0.10	0.08	0.00	0.00	0.00	0.24	0.00	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		0.07	0.09	0.13	0.00	0.00	0.00	0.29	0.00	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		0.04	0.04	0.06	0.00	0.00	0.00	0.14	0.00	0.29	0.29	0.42	0.00	0.00

GROUNDWATER DATA SUMMARY
BOEING DEVELOPMENTAL CENTER SWMU-17

		Pilot Injection	Full Injection #1	Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators			VOCs- micromoles/Liter (b)								Molar Fraction (c)				
		Elapsed Time From Injection (days)	Elapsed Time From Injection (days)	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Acetylene	As, Tot	As, Dis	Cu, Tot	Cu, Dis	DO	Nitrate	Iron II	Sulfate	Methane	ORP	TOC	pH															
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg-N/L)	(mg/L)	(mg/L)	(mg/L)	(mV)	(mg/L)																
Proposed Groundwater Cleanup Levels (a)				5.3	1.4	134	2.4	NA	NA	NA	0.008	0.008	0.008	0.008																						
Well	Date																						Comments	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Total Chloroethenes (d)	Ethene + Ethane	PCE	TCE	*c* DCE	VC	Ethene + Ethane
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		0.04	0.05	0.29	0.00	0.00	0.00	0.38	0.00	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		0.03	0.07	0.42	0.02	0.00	0.00	0.55	0.00	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		0.02	0.06	0.20	0.00	0.00	0.00	0.27	0.00	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	0.07	0.21	0.00	0.00	0.00	0.28	0.00	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	0.07	0.21	0.00	0.00	0.00	0.27	0.00	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		0.03	0.08	0.18	0.00	0.00	0.00	0.29	0.00	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		0.07	0.05	0.40	0.00	0.00	0.00	0.52	0.00	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		0.00	0.00	0.24	0.01	0.00	0.00	0.26	0.00	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	0.00	0.25	0.01	0.00	0.00	0.26	0.00	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	0.00	0.09	0.01	0.00	0.00	0.10	0.00	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	0.04	0.03	0.00	0.04	0.06	0.04	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	0.00	0.03	0.02	0.00	0.00	0.05	0.00	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	0.04	0.21	0.93	0.10	0.25	1.03	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	0.01	0.08	0.06	0.00	0.09	0.06	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		0.00	0.00	0.01	0.03	0.06	0.04	0.04	0.10	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		0.00	0.00	0.00	0.05	0.05	0.00	0.06	0.05	0.03	0.00	0.02	0.50	0.45
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		0.01	0.03	0.04	0.00	0.00	0.00	0.07	0.00	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		0.01	0.03	0.04	0.00	0.00	0.00	0.08	0.00	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		0.01	0.03	0.04	0.00	0.00	0.00	0.08	0.00	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		0.01	0.03	0.04	0.00	0.00	0.00	0.08	0.00	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	0.02	0.04	0.00	0.00	0.00	0.06	0.00	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	0.02	0.04	0.00	0.00	0.00	0.06	0.00	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	0.02	0.05	0.00	0.00	0.00	0.06	0.00	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	0.01	0.03	0.00	0.00	0.00	0.04	0.00	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	0.02	0.04	0.00	0.00	0.00	0.05	0.00	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	0.01	0.03	0.00	0.00	0.00	0.04	0.00	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	0.02	0.00	0.00	0.00	0.02	0.00	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	0.02	0.00	0.00	0.00	0.02	0.00	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	0.02	0.00	0.00	0.00	0.02	0.00	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	0.04	0.00	0.00	0.00	0.04	0.00	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	0.02	0.00	0.00	0.00	0.02	0.00	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	0.02	0.00	0.00	0.00	0.02	0.00	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	0.02	0.00			0.02		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	0.03	0.00			0.03		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	0.01	0.00			0.01		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	0.00	0.00			0.00		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	0.04	0.01			0.06		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	0.03	0.03	0.00	0.00	0.06	0.00	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	0.04	0.26			0.30		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	0.01	0.04			0.05		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	0.00	0.01			0.01		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	0.00	0.02			0.02		0.00	0.00	0.10	0.90	
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		0.18	0.15	0.23	0.00	0.00	0.00	0.56	0.00	0.32	0.27	0.41	0.00	0.00
(IW)	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		0.22	0.43	0.45	0.02	0.00	0.00	1.12	0.00	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		0.02	0.01	2.58	0.06	0.00	0.00	2.67	0.00	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	0.25	0.32	2.46	0.00	0.57	2.46	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	0.82	0.11	0.07	0.93	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	0.03	0.22	0.31	0.28	0.26	0.58	0.00	0.00	0.04	0.27	0.69
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	0.01	0.02	0.06	0.28	0.02	0.34	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	0.01	0.06	0.04	0.21	0.07	0.26	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	0.00	0.13	0.18	0.14	0.14	0.32	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	0.00	0.03	0.00	0.07	0.04	0.07	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	0.04	0.07	0.28	0.04	0.35	0.00	0.00	0.00	0.11	0.89
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		0.24	0.20	0.12	0.00	0.00	0.00	0.56	0.00	0.42	0.36	0.22	0.00	0.00
(IW)	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		0.13	0.21	0.01	0.00	0.06	0.06	0.35	0.11	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	1.24	0.09	0.04	0.00	1.32	0.04	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	0.05	0.78	0.30	0.00	0.83	0.30	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	0.18	0.50	0.00	0.18	0.50	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	0.24	0.61	0.00	0.25	0.61	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	0.08	1.03	0.00	0.08	1.03	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	0.00	0.06	0.12	0.00	0.06	0.12	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	0.05	0.26	0.28	0.05	0.53	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	0.01	0.00	0.11	0.01	0.11	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	0.03	0.14	0.37	0.03	0.50	0.00	0.00	0.00	0.05	0.95

GROUNDWATER DATA SUMMARY
BOEING DEVELOPMENTAL CENTER SWMU-17

		Pilot Injection	Full Injection #1	Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators			VOCs- micromoles/Liter (b)								Molar Fraction (c)				
		Elapsed Time From Injection (days)	Elapsed Time From Injection (days)	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Acetylene	As, Tot	As, Dis	Cu, Tot	Cu, Dis	DO	Nitrate	Iron II	Sulfate	Methane	ORP	TOC	pH															
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg-N/L)	(mg/L)	(mg/L)	(mg/L)	(mV)	(mg/L)																
Proposed Groundwater Cleanup Levels (a)				5.3	1.4	134	2.4	NA	NA	NA	0.008	0.008	0.008	0.008																						
Well	Date																						Comments	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Total Chloroethenes (d)	Ethene + Ethane	PCE	TCE	*c* DCE	VC	Ethene + Ethane
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		0.10	0.14	0.06	0.00	0.00	0.00	0.30	0.00	0.32	0.48	0.20	0.00	0.00
(IW)	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		0.06	0.15	0.12	0.00	0.00	0.00	0.33	0.00	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	0.00	0.45	0.12	0.06	0.00	0.57	0.06	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	0.06	0.09	0.27	0.00	0.15	0.27	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	0.05	0.57	0.12	0.05	0.69	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	0.06	0.61	0.15	0.06	0.76	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	0.03	0.32	0.24	0.03	0.56	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	0.04	0.06	0.06	0.04	0.12	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	0.06	0.07	0.00	0.06	0.07	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	0.02	0.06	0.07	0.02	0.13	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	0.02	0.12	0.09	0.02	0.20	0.00	0.00	0.00	0.10	0.90
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		0.09	0.14	0.17	0.00	0.00	0.00	0.39	0.00	0.23	0.35	0.42	0.00	0.00
(IW)	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		0.07	0.13	0.11	0.00	0.00	0.00	0.31	0.00	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	0.55	0.03	0.00	0.00	0.58	0.00	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	0.40	0.05	0.00	0.00	0.46	0.00	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	0.07	0.05	0.04	0.00	0.12	0.04	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	0.08	0.09	0.04	0.00	0.17	0.04	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	0.02	0.07	0.14	0.00	0.09	0.14	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	0.01	0.08	0.43	0.00	0.09	0.43	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	0.20	0.09	0.00	0.29	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	0.08	0.11	0.00	0.19	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	0.04	0.00	0.00	0.04	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	0.04	0.19	0.00	0.22	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	0.02	0.06	0.15	0.02	0.21	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	0.03	0.09	0.30	0.03	0.39	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	0.04	0.05	0.17	0.04	0.22	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	0.02	0.04	0.07	0.02	0.12	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	0.01	0.00	0.10	0.01	0.10	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	0.01	0.00	0.09	0.01	0.09	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	0.01	0.05	0.14	0.01	0.19	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	0.01	0.00	0.14	0.01	0.14	0.00	0.00	0.00	0.04	0.96
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		0.03	0.05	0.03	0.00	0.00	0.00	0.11	0.00	0.29	0.46	0.25	0.00	0.00
(IW)	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	0.01	0.40	0.00	0.00	0.00	0.41	0.00	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	0.13	0.06	0.06	0.00	0.20	0.06	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	0.04	0.13	0.00	0.04	0.13	0.00	0.00	0.00	0.22	0.78
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	0.00	0.02	0.14	0.13	0.02	0.27	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	0.00	0.03	0.13	0.21	0.04	0.34	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	0.04	0.15	0.23	0.04	0.38	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	0.00	0.04	0.07	0.07	0.04	0.15	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	0.03	0.09	0.05	0.03	0.14	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	0.02	0.00	0.03	0.02	0.03	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	0.03	0.07	0.07	0.03	0.13	0.00	0.00	0.00	0.19	0.81
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		0.02	0.05	0.03	0.00	0.00	0.00	0.10	0.00	0.17	0.53	0.30	0.00	0.00
(IW)	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		0.02	0.05	0.13	0.00	0.00	0.00	0.20	0.00	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	0.00	0.03	0.02	0.00	0.00	0.05	0.00	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	0.01	0.03	0.05	0.00	0.04	0.05	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	0.00	0.02	0.05	0.00	0.02	0.05	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	0.00	0.02	0.05	0.08	0.02	0.13	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	0.00	0.02	0.08	0.17	0.03	0.24	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	0.00	0.08	0.15	0.21	0.09	0.37	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	0.00	0.03	0.00	0.04	0.03	0.04	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	0.00	0.02	0.04	0.08	0.03	0.12	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	0.00	0.01	0.00	0.06	0.02	0.06	0.00	0.00	0.04	0.19	0.76
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		0.06	0.21	0.60	0.00	0.00	0.00	0.87	0.00	0.07	0.25	0.69	0.00	0.00
(IW)	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		0.03	0.07	0.15	0.00	0.00	0.00	0.26	0.00	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	0.51	0.10	0.00	0.00	0.61	0.00	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	0.02	0.12	0.06	0.00	0.14	0.06	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	0.26	0.39	0.00	0.26	0.39	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	0.08	0.26	0.08	0.08	0.34	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	0.14	0.34	0.00	0.14	0.34	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	0.02	0.16	0.29	0.02	0.45	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	0.03	0.11	0.17	0.03	0.28	0.00	0.00	0.00	0.10	0.90
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	0.01	0.04	0.20	0.01	0.24	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	0.02	0.00	0.40	0.02	0.40	0.00	0.00	0.00	0.04	0.96

GROUNDWATER DATA SUMMARY
BOEING DEVELOPMENTAL CENTER SWMU-17

		Pilot Injection	Full Injection #1	Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators			VOCs- micromoles/Liter (b)								Molar Fraction (c)				
		Elapsed Time From Injection (days)	Elapsed Time From Injection (days)	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Acetylene	As, Tot	As, Dis	Cu, Tot	Cu, Dis	DO	Nitrate	Iron II	Sulfate	Methane	ORP	TOC	pH															
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg-N/L)	(mg/L)	(mg/L)	(mg/L)	(mV)	(mg/L)																
Proposed Groundwater Cleanup Levels (a)				5.3	1.4	134	2.4	NA	NA	NA	0.008	0.008	0.008	0.008																						
Well	Date																						Comments	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Total Chloroethenes (d)	Ethene + Ethane	PCE	TCE	*c* DCE	VC	Ethene + Ethane
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		0.06	0.13	0.21	0.00	0.00	0.00	0.39	0.00	0.15	0.33	0.52	0.00	0.00
(IW)	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		0.02	0.02	0.38	0.00	0.00	0.00	0.42	0.00	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	0.47	0.12	0.00	0.00	0.59	0.00	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	0.07	0.38	0.09	0.00	0.46	0.09	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	0.01	0.13	0.21	0.00	0.14	0.21	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	0.08	0.14	0.00	0.08	0.14	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	0.21	0.17	0.09	0.21	0.26	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	0.00	0.12	0.14	0.00	0.13	0.14	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	0.06	0.15	0.00	0.06	0.15	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	0.07	0.11	0.00	0.07	0.11	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	0.03	0.07	0.00	0.03	0.07	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	0.01	0.00	0.08	0.17	0.00	0.09	0.17	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	0.04	0.07	0.00	0.04	0.07	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	0.07	0.14	0.18	0.07	0.32	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	0.05	0.20	0.20	0.05	0.41	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	0.04	0.09	0.19	0.04	0.28	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	0.03	0.05	0.21	0.03	0.26	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	0.04	0.04	0.18	0.04	0.22	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	0.03	0.00	0.27	0.03	0.27	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	0.02	0.05	0.30	0.02	0.35	0.00	0.00	0.00	0.06	0.94
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		0.07	0.17	0.35	0.00	0.00	0.00	0.58	0.00	0.11	0.29	0.60	0.00	0.00
(IW)	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		0.02	0.04	0.05	0.00	0.00	0.00	0.11	0.00	0.18	0.34	0.49	0.00	0.00
	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	0.10	0.09	0.00	0.00	0.19	0.00	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	0.09	0.07	0.00	0.09	0.07	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	0.01	0.08	0.15	0.00	0.09	0.15	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	0.01	0.06	0.11	0.07	0.07	0.18	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	0.00	0.05	0.09	0.20	0.06	0.29	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	0.00	0.04	0.14	0.20	0.05	0.34	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	0.00	0.02	0.10	0.10	0.03	0.20	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	0.00	0.03	0.04	0.15	0.03	0.19	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	0.02	0.04	0.22	0.02	0.26	0.00	0.00	0.00	0.06	0.94
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		0.02	0.04	0.07	0.00	0.00	0.00	0.13	0.00	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		0.02	0.03	0.08	0.00	0.00	0.00	0.13	0.00	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		0.01	0.03	0.12	0.00	0.00	0.00	0.16	0.00	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		0.01	0.03	0.10	0.00	0.00	0.00	0.14	0.00	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		0.01	0.02	0.11	0.00	0.00	0.00	0.15	0.00	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		0.01	0.03	0.17	0.00	0.00	0.00	0.20	0.00	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		0.01	0.04	0.06	0.00	0.00	0.00	0.11	0.00	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		0.02	0.04	0.04	0.00	0.00	0.00	0.10	0.00	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		0.01	0.03	0.08	0.00	0.00	0.00	0.12	0.00	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		0.01	0.01	0.01	0.00	0.00	0.00	0.04	0.00	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		0.01	0.02	0.06	0.00	0.00	0.00	0.09	0.00	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		0.01	0.02	0.05	0.00	0.00	0.00	0.08	0.00	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		0.00	0.01	0.01	0.00	0.00	0.00	0.02	0.00	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		0.00	0.01	0.01	0.00	0.00	0.00	0.02	0.00	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		0.01	0.01	0.02	0.00	0.00	0.00	0.03	0.00	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		0.00	0.02	0.01	0.00	0.00	0.00	0.04	0.00	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		0.00	0.01	0.01	0.00	0.00	0.00	0.02	0.00	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		0.00	0.01	0.02	0.00	0.00	0.00	0.04	0.00	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		0.01	0.02	0.01	0.00	0.00	0.00	0.05	0.00	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		0.01	0.02	0.01	0.00	0.00	0.00	0.05	0.00	0.29	0.49	0.22	0.00	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		0.09	0.16	0.24	0.00	0.00	0.00	0.49	0.00	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		0.05	0.10	0.37	0.07	0.00	0.00	0.59	0.00	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	0.70	0.22	0.05	0.00	0.94	0.05	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	0.54	0.37	0.06	0.00	0.92	0.06	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	0.13	0.24	0.14	0.00	0.37	0.14	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	0.01	0.10	0.24	0.20	0.00	0.35	0.20	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	0.07	0.32	0.23	0.00	0.39	0.23	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	0.05	0.15	0.26	0.00	0.21	0.26	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	0.07	0.12	0.26	0.08	0.19	0.34	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	0.02	0.05	0.15	0.10	0.07	0.25	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	0.03	0.09	0.19	0.03	0.28	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	0.03	0.07	0.20	0.03	0.27	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	0.04	0.19	0.15	0.04	0.35	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	0.03	0.09	0.23	0.03	0.32	0.00	0.00	0.00	0.07	0.93

GROUNDWATER DATA SUMMARY
BOEING DEVELOPMENTAL CENTER SWMU-17

		Pilot Injection	Full Injection #1	Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators			VOCs- micromoles/Liter (b)								Molar Fraction (c)				
		Elapsed Time From Injection (days)	Elapsed Time From Injection (days)	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Acetylene	As, Tot	As, Dis	Cu, Tot	Cu, Dis	DO	Nitrate	Iron II	Sulfate	Methane	ORP	TOC	pH														
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg-N/L)	(mg/L)	(mg/L)	(mg/L)	(mV)	(mg/L)															
Proposed Groundwater Cleanup Levels (a)				5.3	1.4	134	2.4	NA	NA	NA	0.008	0.008	0.008	0.008																					
Well	Date																						Comments	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Total Chloroethenes (d)	Ethene + Ethane	PCE	TCE	*c* DCE	VC	Ethene + Ethane
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	0.06	0.05	0.13	0.06	0.18	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	0.03	0.00	0.12	0.03	0.12	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	0.02	0.06	0.07	0.02	0.13	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	0.02	0.00	0.11	0.02	0.11	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	0.02	0.00	0.11	0.02	0.11	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	0.01	0.00	0.11	0.01	0.11	0.00	0.00	0.00	0.08	0.92
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	0.05	0.46	0.00	0.00	0.00	0.52	0.00	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	0.04	0.26	0.02	0.00	0.00	0.32	0.00	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	0.02	0.18	0.04	0.00	0.00	0.24	0.00	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	0.01	0.14	0.04	0.00	0.00	0.19	0.00	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	0.12	0.03	0.00	0.00	0.16	0.00	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	0.00	0.18	0.06	0.00	0.00	0.24	0.00	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	0.00	0.10	0.10	0.00	0.00	0.20	0.00	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	0.00	0.10	0.13	0.05	0.00	0.24	0.05	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	0.00	0.07	0.16	0.07	0.00	0.23	0.07	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	0.00	0.08	0.14	0.08	0.00	0.23	0.08	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	0.00	0.04	0.12	0.11	0.00	0.17	0.11	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	0.04	0.10	0.07	0.00	0.14	0.07	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	0.01	0.12	0.07	0.07	0.13	0.14	0.00	0.00	0.05	0.44	0.51
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	0.01	0.08	0.11	0.12	0.09	0.23	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	0.01	0.06	0.10	0.09	0.07	0.18	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			0.06		0.8	<0.30	14.0	-99	11.4	6.43		0.00	0.00	0.00	0.11	0.17	0.05	0.11	0.22	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	0.00	0.04	0.16	0.10	0.05	0.26	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	0.03	0.05	0.04	0.03	0.09	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	0.00	0.04	0.07	0.05	0.05	0.12	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	0.00	0.11	0.22	0.08	0.11	0.30	0.00	0.00	0.01	0.26	0.73
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	0.01	0.22	0.09	0.00	0.24	0.09	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	0.01	0.08			0.09		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	0.00	0.01	0.09			0.10		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	0.00	0.01	0.04			0.05		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	0.00	0.01	0.05			0.05		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	0.01	0.05			0.05		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	0.00	0.01	0.05	0.00	0.00	0.06	0.00	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	0.00	0.01	0.10			0.12		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	0.01	0.12	0.22	0.06	0.13	0.28	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	0.00	0.01	0.12	0.12	0.05	0.13	0.17	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	0.00	0.03	0.05	0.07	0.10	0.09	0.16	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	0.02	0.04	0.10	0.10	0.05	0.20	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	0.02	0.09	0.14	0.06	0.11	0.20	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	0.02	0.05	0.15	0.04	0.07	0.19	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	0.01	0.06	0.08	0.00	0.07	0.08	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	0.02	0.07	0.10	0.00	0.09	0.10	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	0.01	0.05	0.10	0.00	0.06	0.10	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	0.01	0.07	0.07	0.00	0.07	0.07	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	0.02	0.05	0.04	0.00	0.07	0.04	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	0.02	0.04	0.06	0.00	0.06	0.06	0.00	0.00	0.16	0.34	0.50
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	0.01	0.10	0.02	0.00	0.00	0.12	0.00	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	0.02	0.10	0.00			0.12		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	0.02	0.13	0.01			0.16		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	0.02	0.11	0.01			0.14		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	0.01	0.10	0.01			0.12		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	0.01	0.10	0.01			0.13		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	0.01	0.10	0.02			0.13		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	0.01	0.10	0.01			0.12		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	0.01	0.08	0.00			0.09		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	0.01	0.07	0.00			0.08		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	0.01	0.06	0.00			0.06		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	0.01	0.07	0.00			0.08		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	0.01	0.06	0.00			0.07		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	0.01	0.06	0.00			0.07		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	0.01	0.04	0.00			0.05		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	0.00	0.04	0.00			0.05		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	0.01	0.06	0.00			0.06		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	0.00	0.05	0.00			0.05		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	0.01	0.07	0.00			0.08		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	0.01	0.08	0.00			0.08		0.00	0.08	0.92	0.00	

GROUNDWATER DATA SUMMARY
BOEING DEVELOPMENTAL CENTER SWMU-17

		Pilot Injection	Full Injection #1	Volatile Organic Compounds							Metals				Aquifer Redox Conditions						Donor Indicators			VOCs- micromoles/Liter (b)								Molar Fraction (c)				
		Elapsed Time From Injection (days)	Elapsed Time From Injection (days)	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Acetylene	As, Tot	As, Dis	Cu, Tot	Cu, Dis	DO	Nitrate	Iron II	Sulfate	Methane	ORP	TOC	pH															
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg-N/L)	(mg/L)	(mg/L)	(mg/L)	(mV)	(mg/L)																
Proposed Groundwater Cleanup Levels (a)				5.3	1.4	134	2.4	NA	NA	NA	0.008	0.008	0.008	0.008																						
Well	Date																						Comments	PCE	TCE	*c* DCE	VC	Ethene	Ethane	Total Chloroethenes (d)	Ethene + Ethane	PCE	TCE	*c* DCE	VC	Ethene + Ethane
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	0.03	0.00	0.00	0.00	0.03	0.00	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	0.05	0.00			0.05		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	0.00	0.05	0.01			0.06		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	0.01	0.06	0.01			0.07		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	0.01	0.06	0.01			0.08		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	0.01	0.07	0.01			0.09		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	0.00	0.04	0.02			0.06		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	0.00	0.05	0.02			0.07		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	0.02	0.22	0.09			0.32		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	0.00	0.03	0.01			0.05		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	0.00	0.03	0.02			0.05		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	0.00	0.05	0.02			0.06		0.00	0.04	0.72	0.25	
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	0.00	0.04	0.02			0.06		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	0.00	0.04	0.02			0.06		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	0.03	0.03			0.06		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	0.03	0.04			0.07		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	0.02	0.04			0.06		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	0.02	0.03			0.05		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	0.05	0.01			0.06		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	0.04	0.02			0.06		0.00	0.00	0.65	0.35	
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	0.02	0.03	0.00	0.00	0.04	0.00	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	0.02	0.04	0.04			0.09		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	0.00	0.01	0.01			0.02		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	0.01	0.03	0.02			0.05		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	0.01	0.04	0.01			0.06		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	0.01	0.00			0.01		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	0.01	0.05	0.03	0.04	0.00	0.09	0.04	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	0.01	0.08	0.03			0.12		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	0.00	0.05	0.03	0.00	0.06	0.07	0.06	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	0.00	0.03	0.02	0.00	0.05	0.06	0.05	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	0.00	0.02	0.01	0.04	0.10	0.03	0.14	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	0.00	0.05	0.03	0.04	0.08	0.08	0.11	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	0.00	0.03	0.03	0.13	0.08	0.06	0.20	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	0.06	0.19	0.07	0.00	0.26	0.07	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	0.00	0.02	0.03	0.09	0.00	0.05	0.09	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	0.00	0.01	0.04	0.09	0.00	0.05	0.09	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	0.00	0.01	0.06	0.00	0.00	0.08	0.00	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	0.00	0.01	0.02	0.00	0.00	0.03	0.00	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	0.00	0.03	0.00	0.04	0.03	0.04	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	0.00	0.01	0.01	0.00	0.06	0.02	0.06	0.00	0.02	0.07	0.14	0.77

PCE = Tetrachloroethene
TCE = Trichloroethene
c DCE = cis-1,2-Dichloroethene
VC = Vinyl Chloride
As = Arsenic
Cu = Copper
Tot = Total
Dis = Dissolved
DO = Dissolved Oxygen
ORP = Oxidation Reduction Potential
NA = Not Applicable, not available
µg/L = micrograms pr 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
not analyzed
= Highlights the predominant ethene
Box = Exceedance of Proposed Cleanup Level

(a) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).
(b) Calculated by dividing the concentration in groundwater by the molecular weight of the compound. Reporting limits for non-detect results replaced with zero.
(c) Indicates the fraction of total ethenes (PCE+TCE+cDCE+VC+ethene/ethane) due to each individual compound on a molar basis.
(d) Sum of PCE, TCE, cDCE, and VC.

Injection Dates:
10/28/2008 Pilot Injection: BDC-05-02 only
8/18/2011 Full Injection #1: BDC-05-02, BDC-05-07, and BDC-05-09 through BDC-05-17; performed 8/15/11-8/18/11

Note

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

0 40 80
Scale in Feet

LANDAU ASSOCIATES

Boeing Developmental Center
Tukwila, Washington

Injection and Monitoring Well Baseline Concentrations

Figure 7

DEVELOPMENTAL CENTER

GROUNDWATER MONITORING

APRIL 2016

AOC-05 DATA

- **AOC-05 Cleanup Action Summary**
- **AOC-05 Downgradient Monitoring**
- **AOC-05 TPH-G, BTEX, and Nitrate Concentration Trend Charts (June 2001 through Present)**
- **Site Plan**

AOC-05 CLEANUP ACTION SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		ORC Injection	Pilot Injection	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													
		BDC-103	BDC-103	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103	BDC-103	BDC-103	BDC-103	BDC-103	Volatile Organic Compounds (all units in ug/L)							Aquifer Redox Conditions							Donor Indicators		
		Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	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 (mg-N/L)	Nitrite (mg-N/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**	**NA**	**NA**	**1546**									
Well	Date																												Comments
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	1099												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-101	11/10/2005	1283												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	1469												<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	1658	-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	1750	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	1777	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	1813	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	1836	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	2029	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	2113	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	2151	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	2200	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	2262	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	2323	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	2389	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	2446	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	2472	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	2498	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	2536	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	2564	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	2628	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	2682	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	2746	1029	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	Very faint iron measurement
BDC-101	2/17/2010	2843	1126	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	2932	1215	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	3023	1306	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	3107	1390	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	3207	1490	1086	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	3283	1566	1162	1043	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	3373	1656	1252	1133	1005	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	3465	1748	1344	1225	1097	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	3575	1858	1454	1335	1207	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	3649	1932	1528	1409	1281	1051	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	3773	2056	1652	1533	1405	1175	1042	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	3843	2126	1722	1603	1475	1245	1112	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	3942	2225	1821	1702	1574	1344	1211	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	4031	2314	1910	1791	1663	1433	1300	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	4131	2414	2010	1891	1763	1533	1400	1071	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	4214	2497	2093	1974	1846	1616	1483	1154	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	4298	2581	2177	2058	1930	1700	1567	1238	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	4382	2665	2261	2142	2014	1784	1651	1322	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	4475	2758	2354	2235	2107	1877	1744	1415	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	4564	2847	2443	2324	2196	1966	1833	1504	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	
BDC-101	1/21/2015	4642	2925	2521	2402	2274	2044	1911	1582	1072	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	4739	3022	2618	2499	2371	2141	2008	1679	1169	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	4822	3105	2701	2582	2454	2224	2091	1762	1252	1000	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	4920	3203	2799	2680	2552	2322	2189	1860	1350	1098	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	5013	3296	2892	2773	2645	2415	2282	1953	1443	1191	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	5090	3373	2969	2850	2722	2492	2359	2030	1520	1268	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	

AOC-05 CLEANUP ACTION SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		ORC Injection	Pilot Injection	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													
		BDC-103	BDC-103	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103	BDC-103	BDC-103	BDC-103	BDC-103	Volatile Organic Compounds (all units in ug/L)							Aquifer Redox Conditions							Donor Indicators	
		Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	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 (mg-N/L)	Nitrite (mg-N/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**	**NA**	**NA**	**1546**									
Well	Date																												Comments
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	1099												<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0									
BDC-102	11/10/2005	1283												<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	1469												<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	1658	-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	1750	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	1777	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	1813	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	1836	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	2029	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	2113	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	2151	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	2200	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	2262	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	2323	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	2389	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	2446	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	2472	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	
BDC-102	3/9/2009	2498	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	2536	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	2564	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	2628	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	2682	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	2746	1029	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	2843	1126	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	2932	1215	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	3023	1306	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	3107	1390	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	3207	1490	1086	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	3283	1566	1162	1043	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	3373	1656	1252	1133	1005	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	3465	1748	1344	1225	1097	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	3575	1858	1454	1335	1207	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	3649	1932	1528	1409	1281	1051	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	3773	2056	1652	1533	1405	1175	1042	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	3843	2126	1722	1603	1475	1245	1112	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	3942	2225	1821	1702	1574	1344	1211	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	4031	2314	1910	1791	1663	1433	1300	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	4131	2414	2010	1891	1763	1533	1400	1071	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	4214	2497	2093	1974	1846	1616	1483	1154	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	4298	2581	2177	2058	1930	1700	1567	1238	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	4382	2665	2261	2142	2014	1784	1651	1322	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	4475	2758	2354	2235	2107	1877	1744	1415	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	4564	2847	2443	2324	2196	1966	1833	1504	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	4642	2925	2521	2402	2274	2044	1911	1582	1072	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	4739	3022	2618	2499	2371	2141	2008	1679	1169	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	4822	3105	2701	2582	2454	2224	2091	1762	1252	1000	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	4920	3203	2799	2680	2552	2322	2189	1860	1350	1098	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	5013	3296	2892	2773	2645	2415	2282	1953	1443	1191	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	5090	3373	2969	2850	2722	2492	2359	2030	1520	1268	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	

AOC-05 CLEANUP ACTION SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		ORC Injection	Pilot Injection	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													
		BDC-103	BDC-103	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103	BDC-103	BDC-103	BDC-103	BDC-103	Volatile Organic Compounds (all units in ug/L)							Aquifer Redox Conditions							Donor Indicators	
		Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	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 (mg-N/L)	Nitrite (mg-N/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**	**NA**	**NA**	**1546**									
Well	Date																												Comments
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									
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	1099												110	2,200	5,500	3,800	14,000	3,200	17,200									
BDC-103	11/10/2005	1283												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	1469												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	1658	-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	1750	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	1777	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	1813	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	1836	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	2029	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	2113	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	2151	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	2200	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	2262	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	2323	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	2389	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	2446	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	2472	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	2498	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	2536	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	2564	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	2628	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	2682	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	2746	1029	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	2843	1126	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	2932	1215	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	3023	1306	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	3107	1390	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	3207	1490	1086	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	3283	1566	1162	1043	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	3373	1656	1252	1133	1005	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	3465	1748	1344	1225	1097	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	3575	1858	1454	1335	1207	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	3649	1932	1528	1409	1281	1051	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	3773	2056	1652	1533	1405	1175	1042	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	3843	2126	1722	1603	1475	1245	1112	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	3942	2225	1821	1702	1574	1344	1211	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	4031	2314	1910	1791	1663	1433	1300	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	4131	2414	2010	1891	1763	1533	1400	1071	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	4214	2497	2093	1974	1846	1616	1483	1154	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	4298	2581	2177	2058	1930	1700	1567	1238	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	4382	2665	2261	2142	2014	1784	1651	1322	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	4475	2758	2354	2235	2107	1877	1744	1415	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	4564	2847	2443	2324	2196	1966	1833	1504	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	4642	2925	2521	2402	2274	2044	1911	1582	1072	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	4739	3022	2618	2499	2371	2141	2008	1679	1169	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	4822	3105	2701	2582	2454	2224	2091	1762	1252	1000	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	4920	3203	2799	2680	2552	2322	2189	1860	1350	1098	713		19	480	740	600	1800	850	2650	0.11	<0.10	<0.10	1.0	0.55		-85		6.61
BDC-103	1/27/2016	5013	3296	2892	2773	2645	2415	2282	1953	1443	1191	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
BDC-103	4/13/2016	5090	3373	2969	2850	2722	2492	2359	2030	1520	1268	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

AOC-05 CLEANUP ACTION SUMMARY
DEVELOPMENTAL CENTER GROUNDWATER MONITORING

		ORC Injection	Pilot Injection	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													
		BDC-103	BDC-103	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103/104	BDC-103	BDC-103	BDC-103	BDC-103	BDC-103	Volatile Organic Compounds (all units in ug/L)							Aquifer Redox Conditions							Donor Indicators	
		Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	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 (mg-N/L)	Nitrite (mg-N/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**	**NA**	**NA**	**1546**									
Well	Date																												Comments
BDC-104	2/18/2008	2113	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	2151	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	2200	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	2262	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	2323	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	2389	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	2446	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	2472	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	2498	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	2536	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	2564	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	2628	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	2682	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	2746	1029	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	2843	1126	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	2932	1215	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	3023	1306	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	3107	1390	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	3207	1490	1086	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	3283	1566	1162	1043	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	3373	1656	1252	1133	1005	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	3465	1748	1344	1225	1097	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	3575	1858	1454	1335	1207	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	3649	1932	1528	1409	1281	1051	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	3773	2056	1652	1533	1405	1175	1042	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	3843	2126	1722	1603	1475	1245	1112	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	3942	2225	1821	1702	1574	1344	1211	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	4031	2314	1910	1791	1663	1433	1300	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	4131	2414	2010	1891	1763	1533	1400	1071	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	4214	2497	2093	1974	1846	1616	1483	1154	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	4298	2581	2177	2058	1930	1700	1567	1238	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	4382	2665	2261	2142	2014	1784	1651	1322	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	4475	2758	2354	2235	2107	1877	1744	1415	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	4564	2847	2443	2324	2196	1966	1833	1504	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	4642	2925	2521	2402	2274	2044	1911	1582	1072	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	4739	3022	2618	2499	2371	2141	2008	1679	1169	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	
BDC-104	7/20/2015	4822	3105	2701	2582	2454	2224	2091	1762	1252	1000	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	4920	3203	2799	2680	2552	2322	2189	1860	1350	1098	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	5013	3296	2892	2773	2645	2415	2282	1953	1443	1191	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	5090	3373	2969	2850	2722	2492	2359	2030	1520	1268	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	

Injection Dates	Months Elapsed	
5/7/2002		ORC
1/18/2007	57	Pilot -scale nitrate
2/26/2008	13	1st full scale injection
6/24/2008	4	2nd full scale injection
10/30/2008	4	3rd full scale injection
6/17/2009	8	4th full scale injection (start ammonium phosphate, 1/3 ammonium nitrate dose to both wells)
10/28/2009	4	5th full scale injection (103 full dose, 104 half dose)
9/22/2010	11	6th full scale injection (103 only full dose)
2/14/2012	17	7th full scale injection (103 only full dose)
10/23/2012	8	8th full scale injection (103 only 1.5x volume dose)
11/12/2013	13	9th full scale injection (103 only 1.5x volume dose)
3/23/2016	29	10th full scale injection (103 only 1.5x volume, half concentration dose)

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

= No sample collected or sample not analyzed for specified constituent.

Box = Exceedance of proposed CUL

(a) Proposed Cleanup Standards and Comparison to Site Data, Boeing Developmental Center, Tukwila,Washington (Landau Associates, 5/7/13).
(b) BTEX data questionable for this event. Concentrations inconsistent with TPH-G data for indicated event and BTEX data from other events.

2/19/12 = LLI 1290767, 1291164

NITRATE CONCENTRATIONS AT DOWNGRADIENT MONITORING LOCATIONS
AOC-05 ANAEROBIC BIOREMEDIATION REMEDIAL ACTION
BOEING DEVELOPMENTAL CENTER

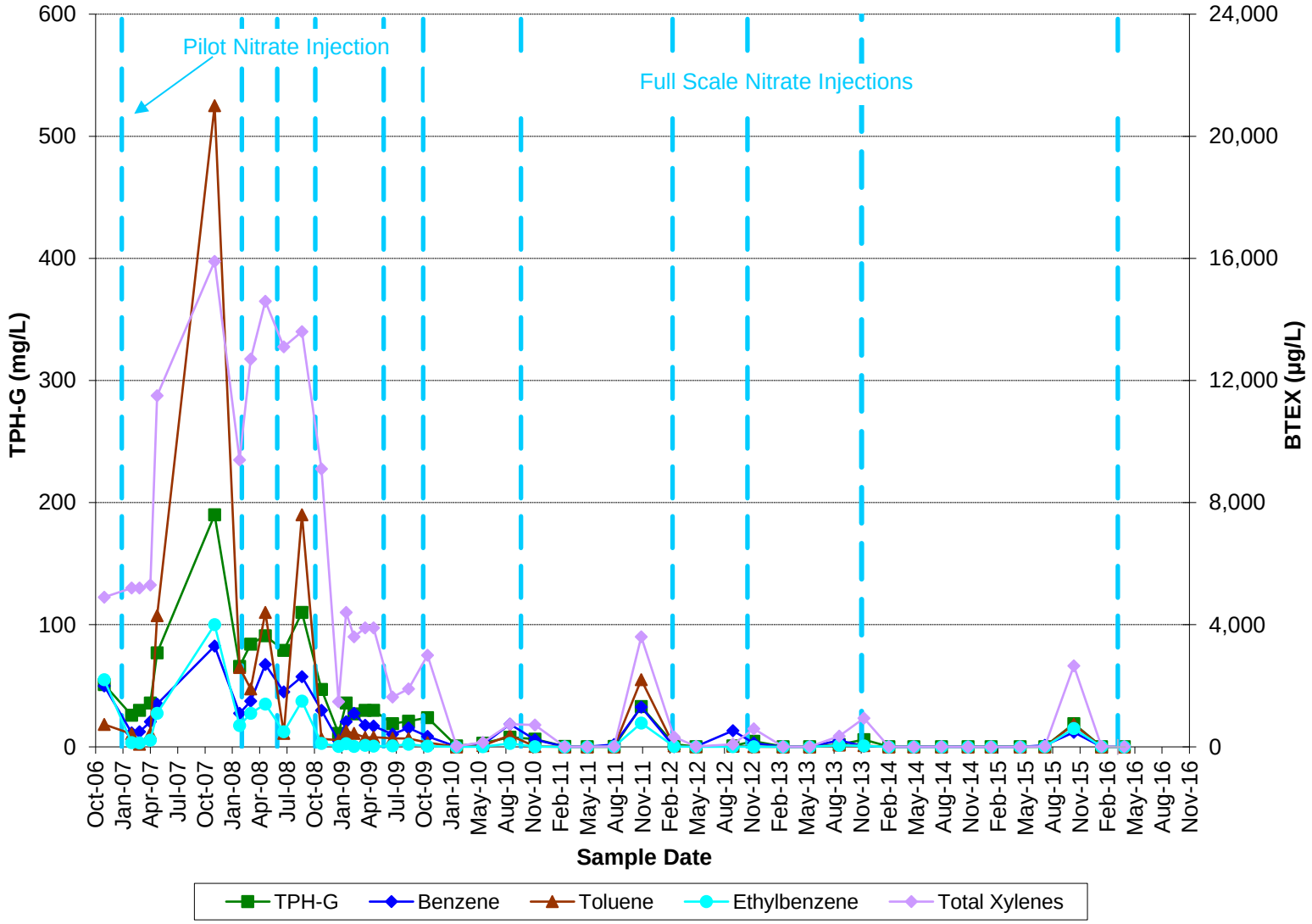
				Aquifer Redox Conditions					
				DO	**Nitrate**	Iron II	Sulfate	Methane	ORP
Area	Well	Date		(mg/L)	**(mg-N/L)**	(mg/L)	(mg/L)	(mg/L)	(mV)
SWMU-17	BDC-05-04	5/15/2006	Natural Redox Baseline		**12.3**	2.6	33.4		
SWMU-17	BDC-05-04	10/23/2008		2.45	**7.6**	0.1	31.0	0.29	73.5
SWMU-17	BDC-05-04	11/2/2008		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	Downgradient Monitoring Triggered	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-20	MW-17A	05/15/2006	Natural Redox Baseline		**1.37**	0.0	27.0		
SWMU-20	MW-17A	11/12/2009	Downgradient Monitoring Triggered		**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		
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-18A	05/15/2006	Natural Redox Baseline		**0.154**	0.4	64.8		
SWMU-20	MW-18A	11/12/2009	Downgradient Monitoring Triggered		**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

NITRATE CONCENTRATIONS AT DOWNGRADIENT MONITORING LOCATIONS
AOC-05 ANAEROBIC BIOREMEDIATION REMEDIAL ACTION
BOEING DEVELOPMENTAL CENTER

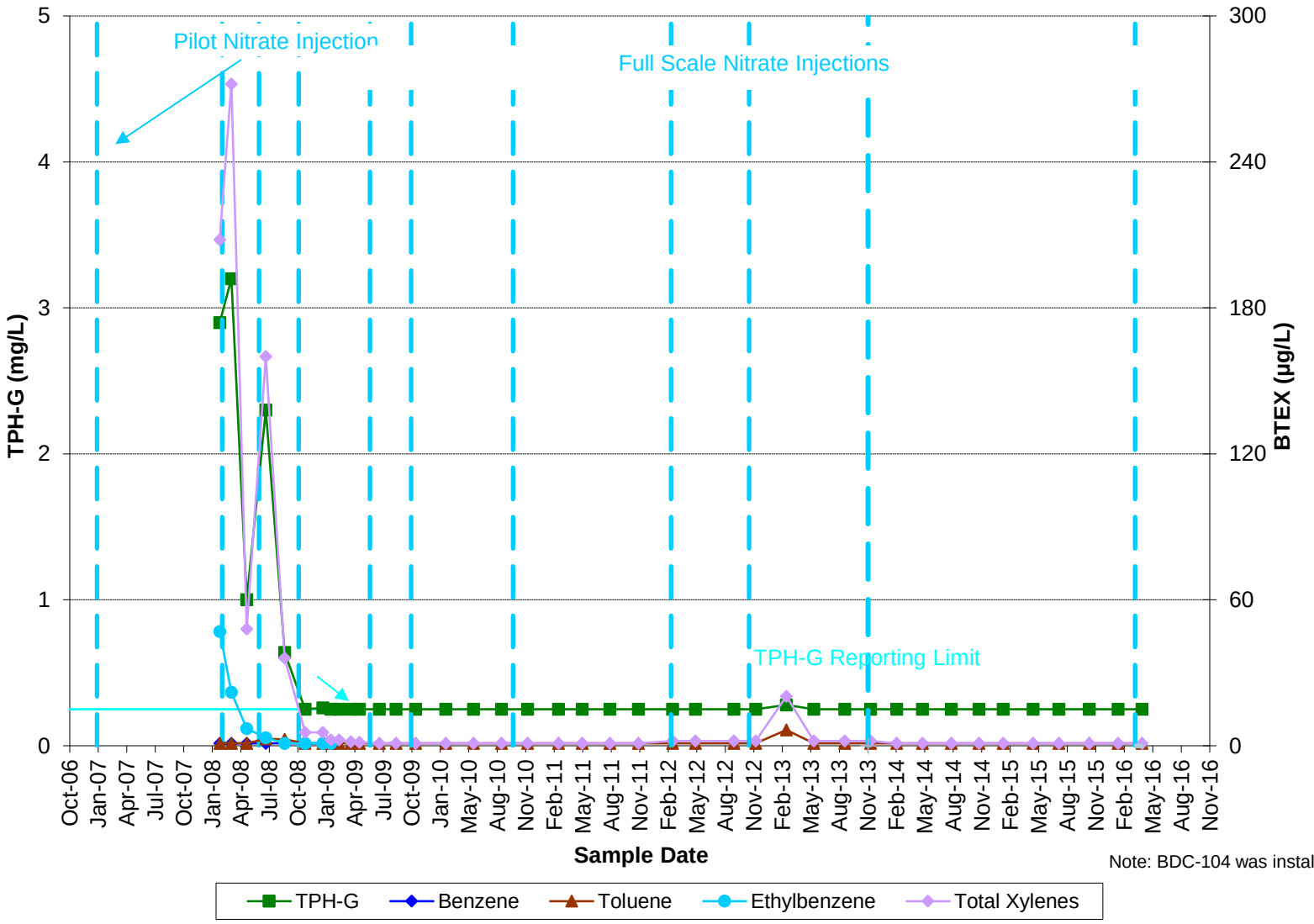
				Aquifer Redox Conditions					
				DO	**Nitrate**	Iron II	Sulfate	Methane	ORP
Area	Well	Date		(mg/L)	**(mg-N/L)**	(mg/L)	(mg/L)	(mg/L)	(mV)
SWMU-20	MW-21A	05/15/2006	Natural Redox Baseline		**0.136**	0.4	54.9		
SWMU-20	MW-21A	11/12/2009	Downgradient Monitoring Triggered		**<0.1**				
SWMU-20	MW-21A	05/17/2010			**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		
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

DO = dissolved oxygen
mg/L = milligrams per liter
mg/NL = mg/L as nitrogen
mV = millivolt
ORP = oxidation reduction potential
Nitrate column bolded for emphasis of target compound. Other results included for aquifer redox evaluation.
= not analyzed

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

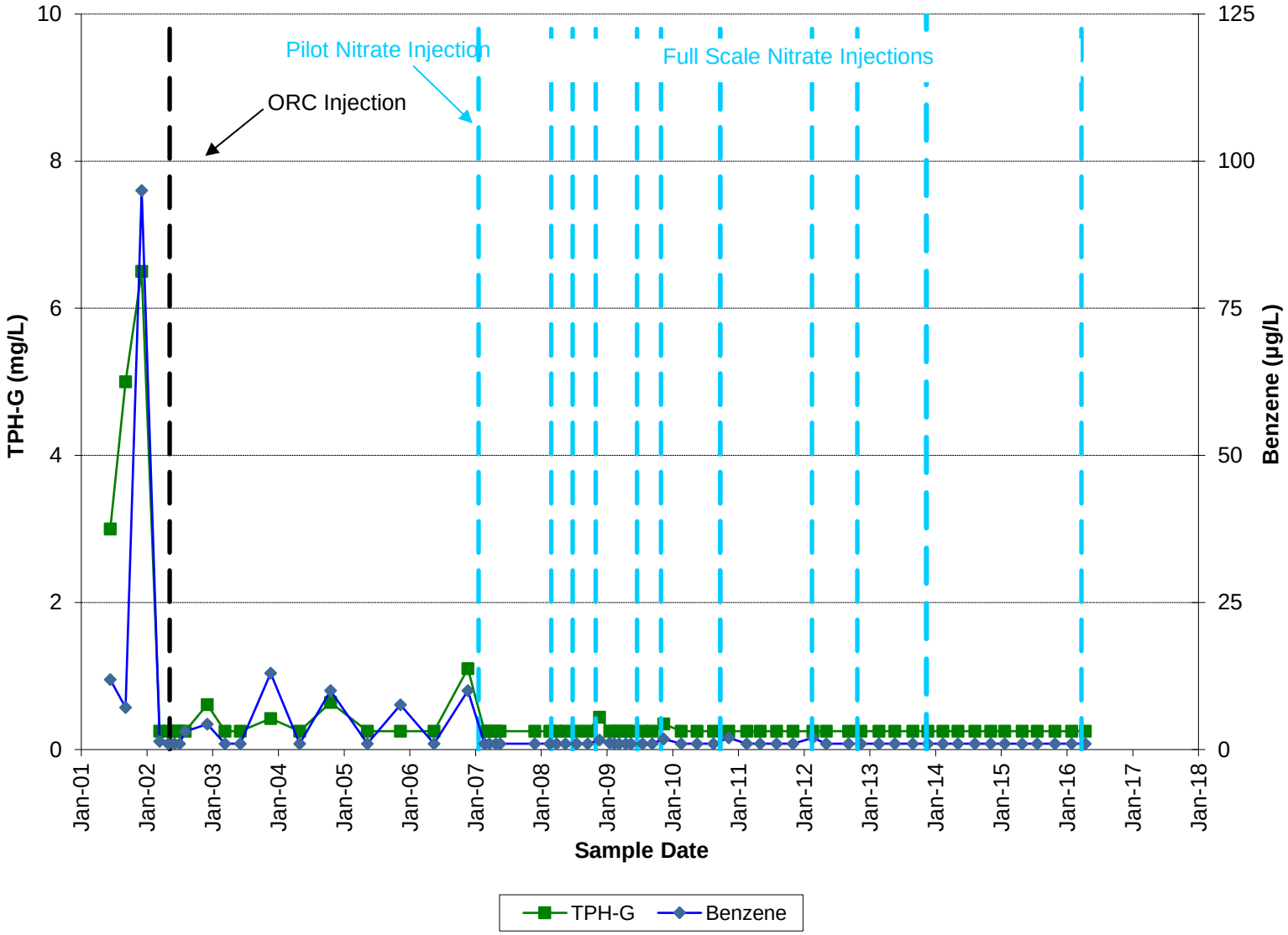


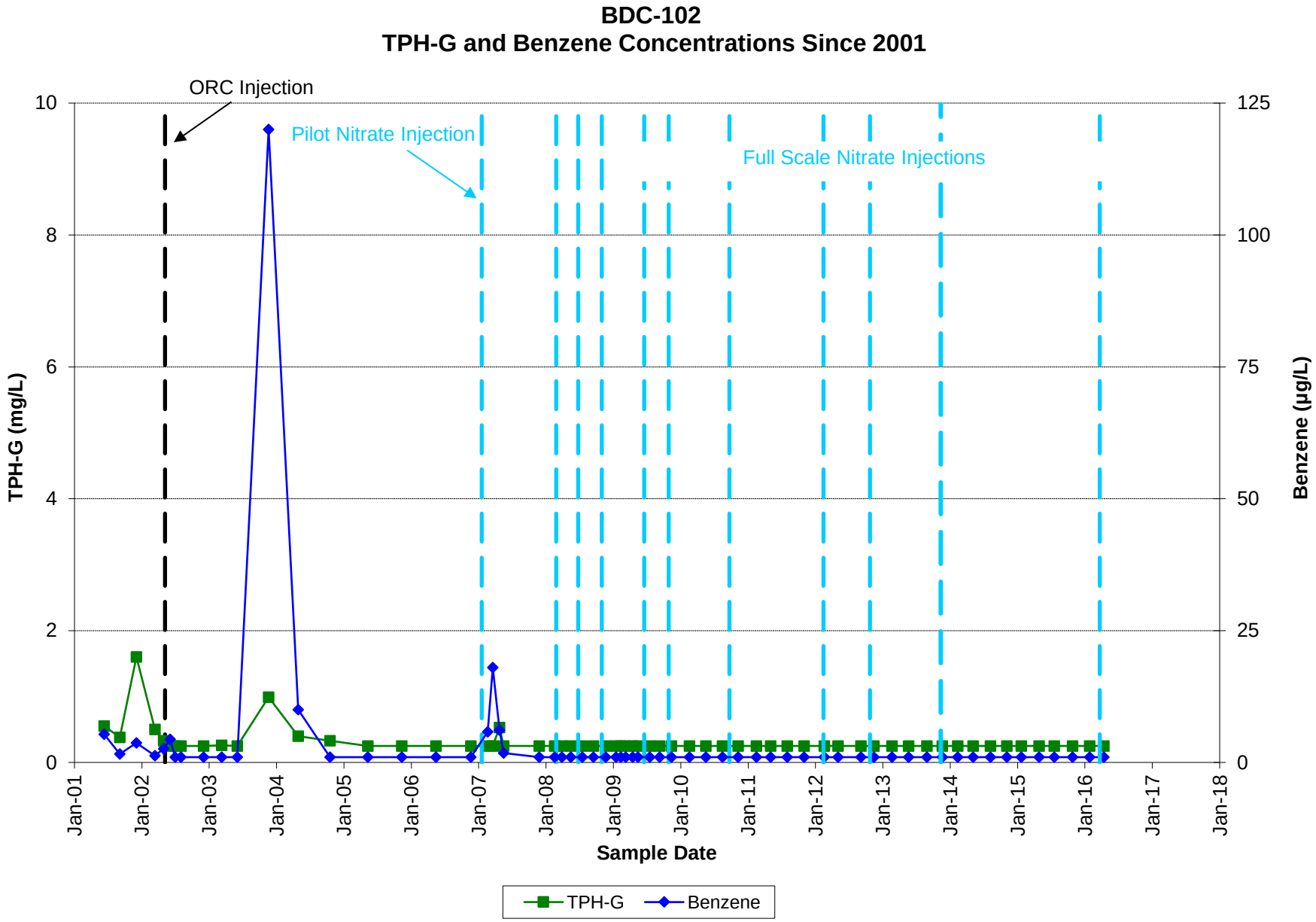
BDC-104
TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing



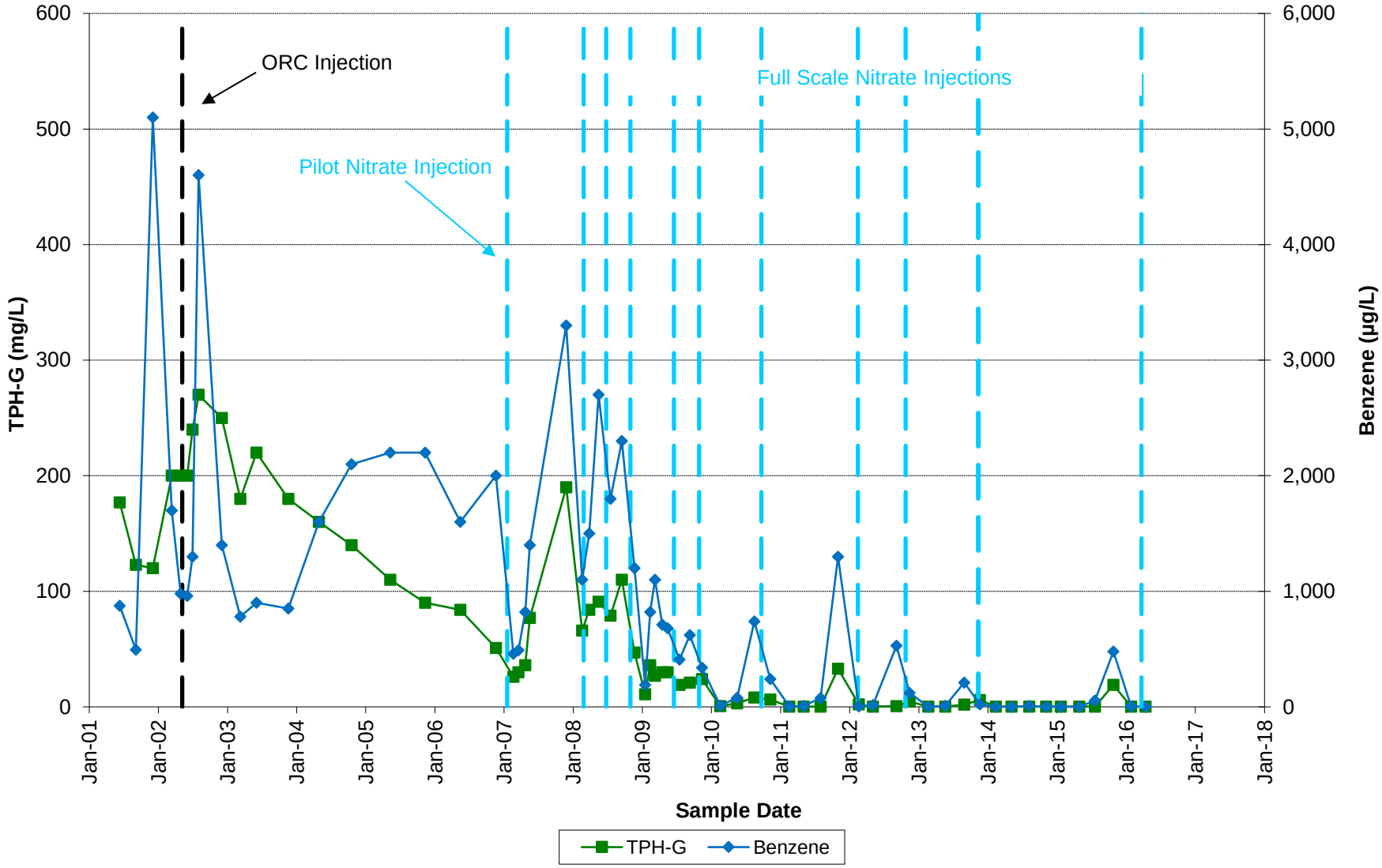
Note: BDC-104 was installed February 2008

BDC-101
TPH-G and Benzene Concentrations Since 2001

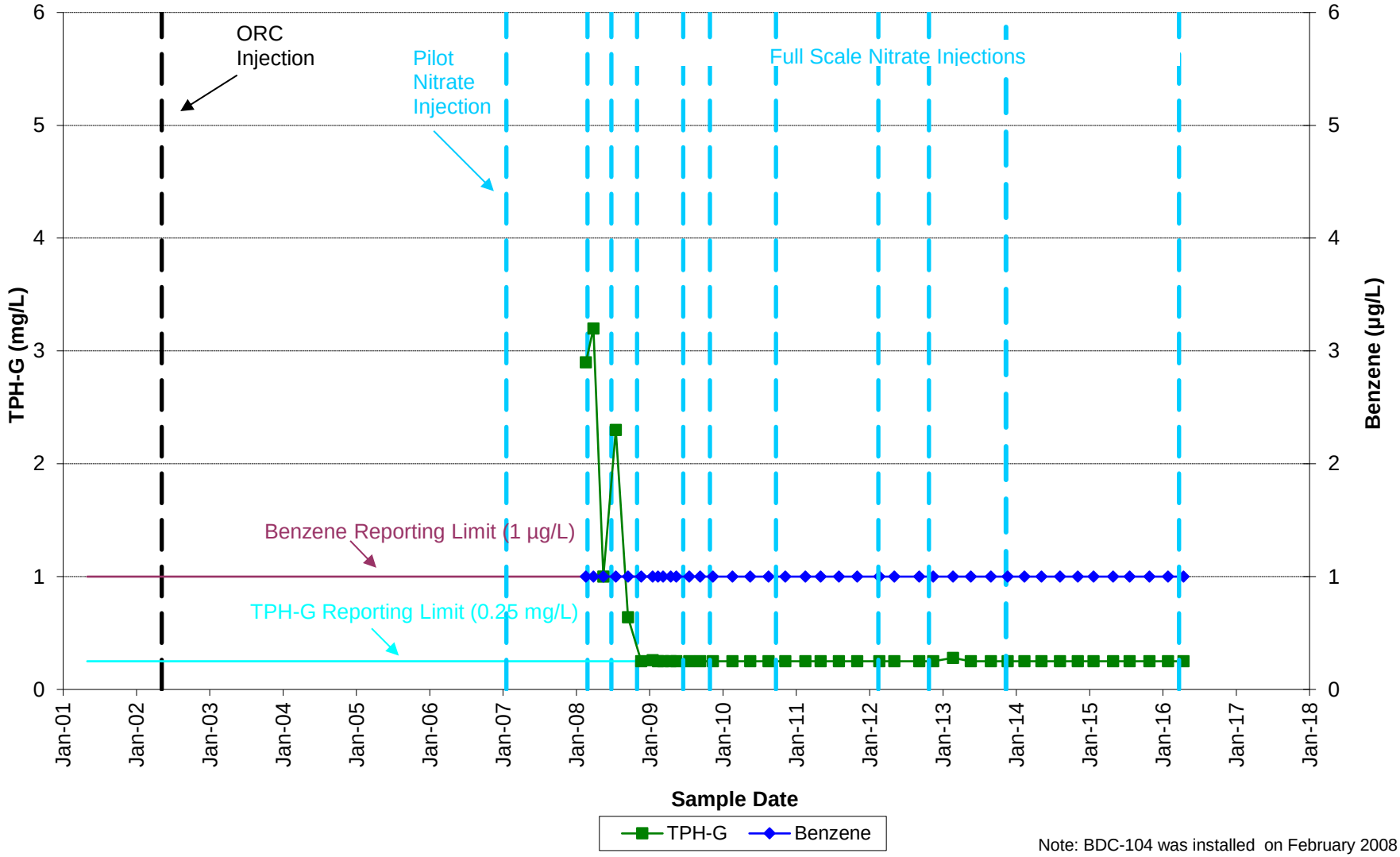



BDC-102
TPH-G and Benzene Concentrations Since 2001
ORC Injection
Pilot Nitrate Injection
Full Scale Nitrate Injections
TPH-G (mg/L)
Benzene (µg/L)
Sample Date
0
2
4
6
8
10
0
25
50
75
100
125
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
TPH-G
Benzene

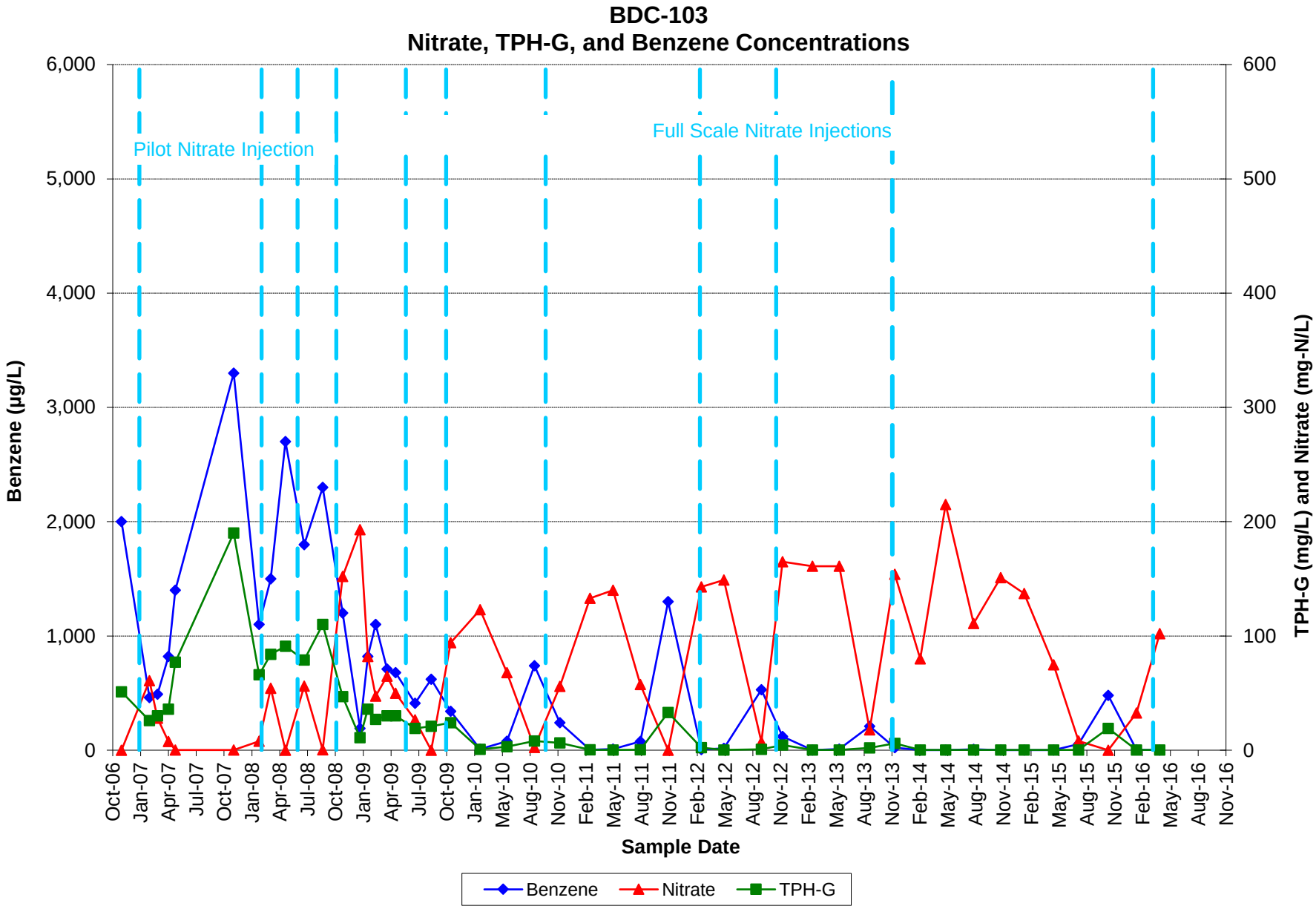
BDC-103
TPH-G and Benzene Concentrations Since 2001



BDC-104
TPH-G and Benzene Concentrations Since 2001



Note: BDC-104 was installed on February 2008


BDC-103
Nitrate, TPH-G, and Benzene Concentrations
Pilot Nitrate Injection
Full Scale Nitrate Injections
Benzene (µg/L)
TPH-G (mg/L) and Nitrate (mg-N/L)
Sample Date
Benzene
Nitrate
TPH-G
6,000
5,000
4,000
3,000
2,000
1,000
0
600
500
400
300
200
100
0
Oct-06
Jan-07
Apr-07
Jul-07
Oct-07
Jan-08
Apr-08
Jul-08
Oct-08
Jan-09
Apr-09
Jul-09
Oct-09
Jan-10
May-10
Aug-10
Nov-10
Feb-11
May-11
Aug-11
Nov-11
Feb-12
May-12
Aug-12
Nov-12
Feb-13
May-13
Aug-13
Nov-13
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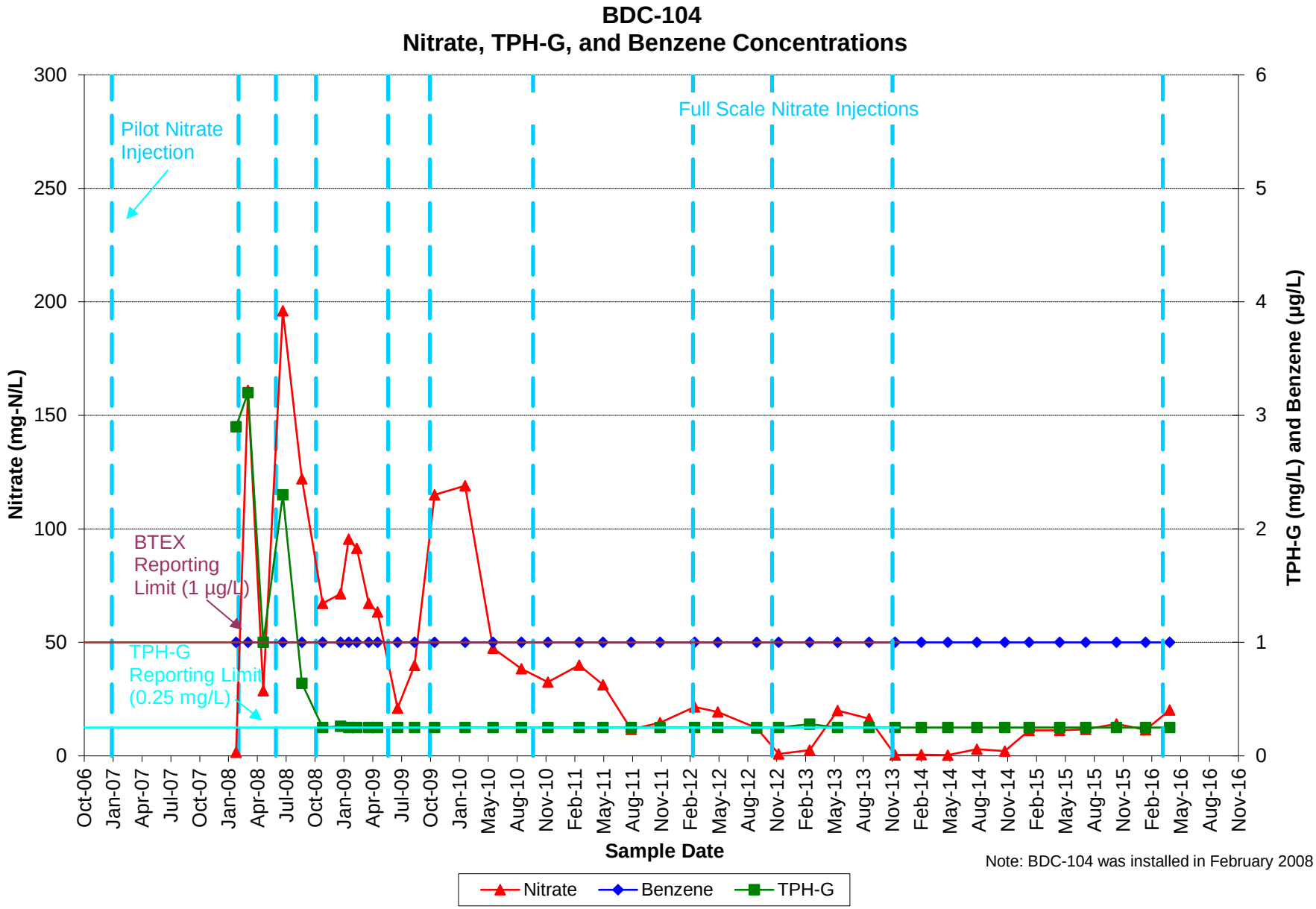
May-16
Aug-16
Nov-16


BDC-104
Nitrate, TPH-G, and Benzene Concentrations
Pilot Nitrate Injection
Full Scale Nitrate Injections
BTEX Reporting Limit (1 µg/L)
TPH-G Reporting Limit (0.25 mg/L)
Nitrate (mg-N/L)
TPH-G (mg/L) and Benzene (µg/L)
Sample Date
Nitrate
Benzene
TPH-G
Note: BDC-104 was installed in February 2008

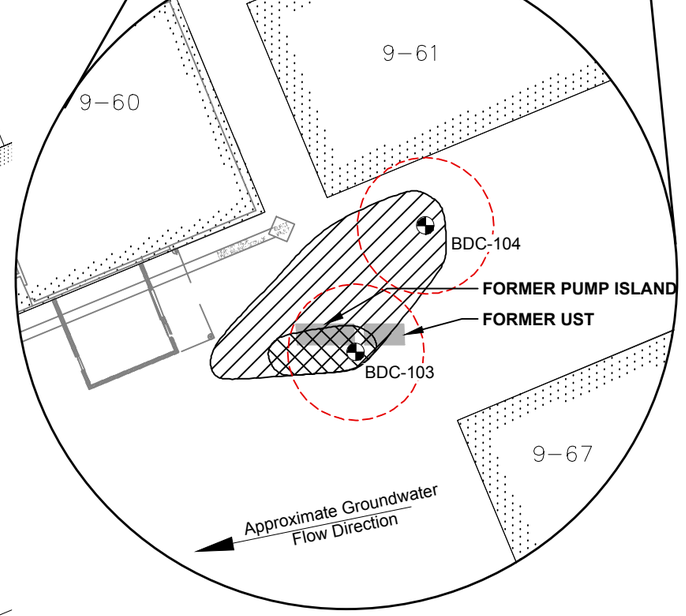
N

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

9-59
9-60
9-61
9-64
9-67
9-69
9-75
9-98
9-103
9-50

SWMU-17
SWMU-20
AOC-05

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



Legend

- Injection and/or Monitoring Well
- Estimated Radius of Injection
- Approximate extent of groundwater with gasoline-range hydrocarbon concentrations greater than the 0.8 mg/L preliminary screening level (data is pre-ORC® injection)
- Approximate extent of groundwater with benzene concentrations greater than the 71 µg/L preliminary screening level (data is pre-ORC® injection)

0 60 120
Approximate Scale in Feet

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Site Plan**	Figure 8

Boeing Developmental Center | G:\Projects\025093\112\012\Figure 8.dwg (A) "Figure 8" 12/14/2015

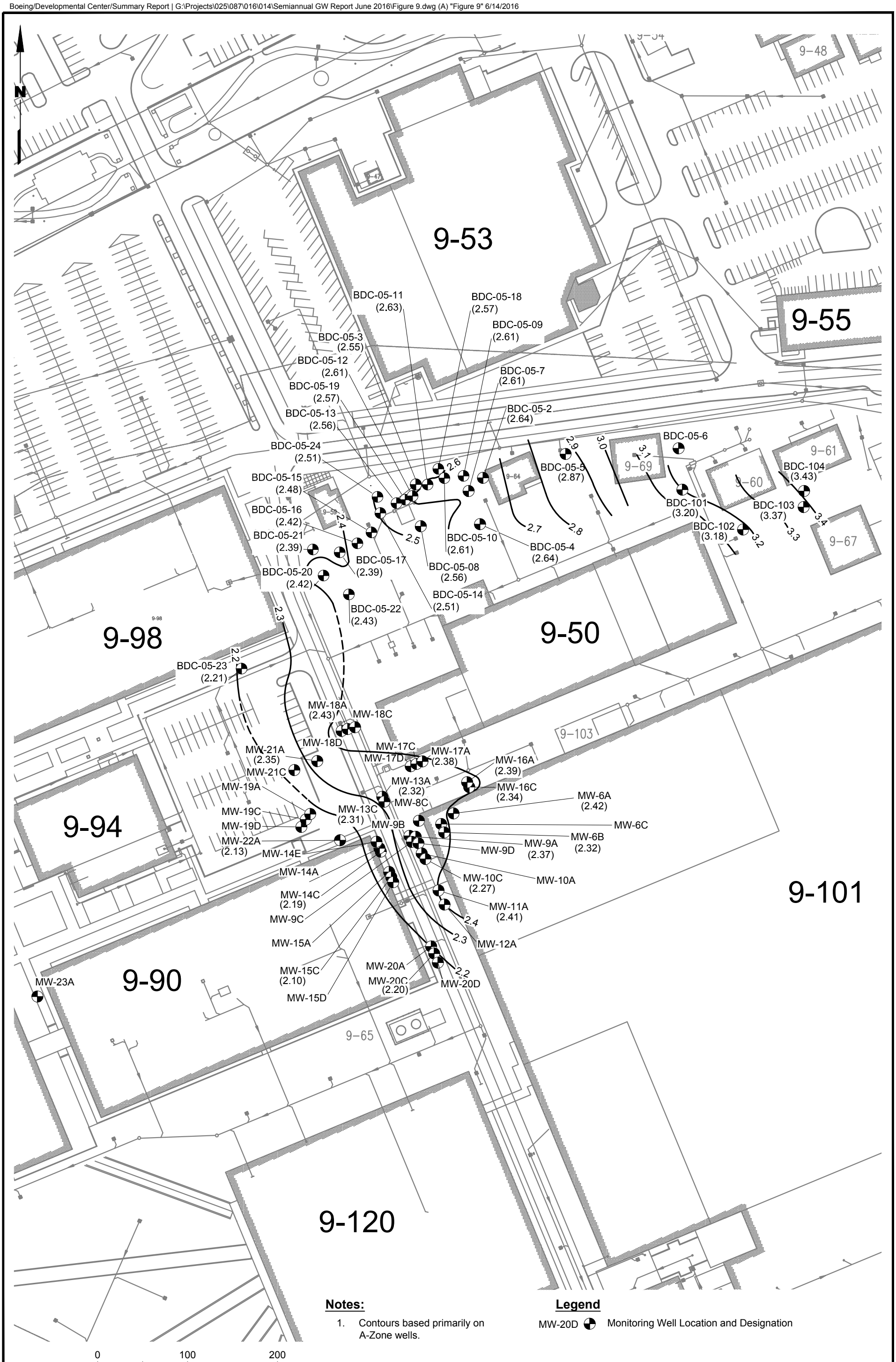
DEVELOPMENTAL CENTER

GROUNDWATER MONITORING

APRIL 2016

GROUNDWATER ELEVATION INFORMATION

- **CONTOUR MAP**
- **CUMULATIVE WATER LEVEL MEASUREMENTS (November 1999 to Present)**



Notes:

1. Contours based primarily on A-Zone wells.

Legend

MW-20D ◒ Monitoring Well Location and Designation

LANDAU ASSOCIATES

Boeing Developmental Center Tukwila, Washington	**Facility-Wide Groundwater Elevation Contours- April 2016**	Figure 9

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	April 2016		February 2016		October 2015		July 2015		April 2015		January 2015		November 2014	
				Water Elevation		Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-101-bldg.	MW-6A	24.25	12.38	2.42			12.80	2.00			12.65	2.15			12.22	2.58
9-101-bldg.	MW-6B	27.20	12.77	2.32			13.16	1.93			13.02	2.07			12.58	2.51
9-101-bldg.	MW-6C	40.55														
9-101-bldg.	MW-8C	40.20														
9-101-bldg.	MW-9A	21.30	12.37	2.37			12.83	1.91			12.64	2.10			12.18	2.56
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
9-101-bldg.	MW-10C	40.40	12.37	2.27			12.66	1.96			12.57	2.05			12.06	2.56
9-101-bldg.	MW-11A	19.90	12.47	2.41			12.87	2.01			12.74	2.14			12.31	2.57
9-101-bldg.	MW-12A	20.20													12.38	2.45
9-101-bldg.	MW-13A	19.37	11.82	2.32			12.23	1.91			12.19	1.95			11.71	2.43
9-101-bldg.	MW-13C	35.62	11.71	2.31			12.08	1.94			12.07	1.95			11.59	2.43
9-101-bldg.	MW-14A	19.00													11.93	2.44
9-101-bldg.	MW-14C	33.30	11.78	2.19			11.95	2.02			11.95	2.02			11.54	2.43
9-101-bldg.	MW-14E	82.10														
9-101-bldg.	MW-15A	20.70													11.77	2.40
9-101-bldg.	MW-15C	34.35	12.45	2.10			12.19	1.98			12.29	1.88			11.70	2.47
9-101-bldg.	MW-15D	51.80														
9-101-bldg.	MW-16A	20.55	12.60	2.39			12.96	2.03			12.85	2.14			12.40	2.59
9-101-bldg.	MW-16C	38.30	12.70	2.34			13.14	1.90			13.02	2.02			12.58	2.46
9-101-bldg.	MW-17A	19.00	12.28	2.38			12.83	1.97			12.67	2.13			12.25	2.55
9-101-bldg.	MW-17C	35.00														
9-101-bldg.	MW-17D	52.50														
9-101-bldg.	MW-18A	20.02	11.87	2.43			12.36	1.94			12.26	2.04			11.86	2.44
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	11.95	2.20			12.14	2.01			12.19	1.96			11.61	2.54
9-101-bldg.	MW-20D	50.15														
9-101-bldg.	MW-22A	19.20	12.12	2.13			12.34	1.91			12.33	1.92			11.96	2.29
9-101-bldg.	MW-23A	19.50														
9-101/9-50 bldg.	MW-21A	19.90	12.10	2.35			12.55	1.90			12.48	1.97			12.06	2.39
9-101/9-50 bldg.	MW-21C	34.00														
9-64-bldg.	BDC-05-02	25.35	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
9-64-bldg.	BDC-05-03	25.47	11.86	2.55			12.33	2.08			12.19	2.22			11.79	2.62
9-64-bldg.	BDC-05-04	25.36	11.95	2.64			12.54	2.05			12.26	2.33			11.95	2.64
9-64-bldg.	BDC-05-05	24.18	11.57	2.87			12.18	2.26			11.86	2.58			11.53	2.91
9-64-bldg.	BDC-05-07	25.30	11.38	2.61			11.88	2.11			11.67	2.32			11.37	2.62
9-64-bldg.	BDC-05-08	26.75	12.11	2.56			12.62	2.05			12.47	2.20			12.10	2.57
9-64-bldg.	BDC-05-09	24.55	11.80	2.61			12.30	2.11			12.10	2.31			11.79	2.62
9-64-bldg.	BDC-05-10	24.57	11.80	2.61			12.27	2.14			12.11	2.30			11.72	2.69
9-64-bldg.	BDC-05-11	24.85	12.02	2.63			12.99	1.66			12.33	2.32			11.93	2.72
9-64-bldg.	BDC-05-12	24.87	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
9-64-bldg.	BDC-05-13	24.78	11.87	2.56			12.37	2.06			12.20	2.23			11.85	2.58
9-64-bldg.	BDC-05-14	24.85	11.71	2.51			12.18	2.04			12.03	2.19			11.70	2.52
9-64-bldg.	BDC-05-15	24.48	11.49	2.48			11.95	2.02			11.83	2.14			11.47	2.50
9-64-bldg.	BDC-05-16	24.89	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
9-64-bldg.	BDC-05-17	24.82	11.86	2.39			12.29	1.96			12.12	2.13			11.86	2.39
9-64-bldg.	BDC-05-18	24.69	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
9-64-bldg.	BDC-05-19	24.85	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
9-64-bldg.	BDC-05-20	24.80	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
9-64-bldg.	BDC-05-21	24.86	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

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	*Well ID No.*	*Well Depth*	*April 2016*		*February 2016*		*October 2015*		*July 2015*		*April 2015*		*January 2015*		*November 2014*	
				Water Elevation		*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
9-64-bldg.	BDC-05-22	25.07	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
9-64-bldg.	BDC-05-23	25.10	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
9-64-bldg.	BDC-05-24	24.73	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
9-60 bldg.	BDC-101	18.42	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
9-60 bldg.	BDC-102	18.83	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
9-60 bldg.	BDC-103	18.51	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
9-60 bldg.	BDC-104	18.90	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
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														

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	August 2014		May 2014		Feb 2014		Nov 2013		August 2013		May 2013		Feb 2013	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-101-bldg.	MW-6A	24.25			12.10	2.70			12.82	1.98			12.92	1.88		
9-101-bldg.	MW-6B	27.20			14.44	0.65			13.16	1.93			13.27	1.82		
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			12.88	1.86			12.80	1.94		
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			11.98	2.71			12.81	1.88			12.72	1.97		
9-101-bldg.	MW-10C	40.40			11.91	2.71			12.73	1.89			12.65	1.97		
9-101-bldg.	MW-11A	19.90			12.10	2.78			12.89	1.99			12.84	2.04		
9-101-bldg.	MW-12A	20.20			12.17	2.66			12.98	1.85			12.88	1.95		
9-101-bldg.	MW-13A	19.37			11.62	2.52			12.37	1.77			12.36	1.78		
9-101-bldg.	MW-13C	35.62			11.49	2.53			12.23	1.79			12.22	1.80		
9-101-bldg.	MW-14A	19.00			11.85	2.52			12.59	1.78			12.65	1.72		
9-101-bldg.	MW-14C	33.30			11.49	2.48			12.17	1.80			12.25	1.72		
9-101-bldg.	MW-14E	82.10														
9-101-bldg.	MW-15A	20.70			11.72	2.45			12.44	1.73			12.48	1.69		
9-101-bldg.	MW-15C	34.35			11.71	2.46			12.42	1.75			12.54	1.63		
9-101-bldg.	MW-15D	51.80														
9-101-bldg.	MW-16A	20.55			12.22	2.77			13.06	1.93			13.07	1.92		
9-101-bldg.	MW-16C	38.30			12.32	2.72			13.24	1.80			13.25	1.79		
9-101-bldg.	MW-17A	19.00			12.11	2.69			12.90	1.90			12.98	1.82		
9-101-bldg.	MW-17C	35.00														
9-101-bldg.	MW-17D	52.50														
9-101-bldg.	MW-18A	20.02			11.70	2.60			12.23	2.07			12.58	1.72		
9-101-bldg.	MW-18C	34.55														
9-101-bldg.	MW-18D	52.85														
9-101-bldg.	MW-19A	16.86											10.74	1.49		
9-101-bldg.	MW-19C	33.92														
9-101-bldg.	MW-19D	51.86														
9-101-bldg.	MW-20A	19.34														
9-101-bldg.	MW-20C	35.32			11.58	2.57			12.40	1.75			12.50	1.65		
9-101-bldg.	MW-20D	50.15														
9-101-bldg.	MW-22A	19.20			11.90	2.35			12.42	1.83			12.72	1.53		
9-101-bldg.	MW-23A	19.50														
9-101/9-50 bldg.	MW-21A	19.90			11.90	2.55			12.39	2.06			12.80	1.65		
9-101/9-50 bldg.	MW-21C	34.00														
9-64-bldg.	BDC-05-02	25.35	12.26	2.15	11.69	2.72	12.21	2.20	12.36	2.05	12.47	1.94	12.29	2.12	12.19	2.22
9-64-bldg.	BDC-05-03	25.47			11.76	2.65			12.43	1.98			12.36	2.05		
9-64-bldg.	BDC-05-04	25.36			11.93	2.66			12.51	2.08			12.17	2.42		
9-64-bldg.	BDC-05-05	24.18			11.47	2.97			12.15	2.29			12.13	2.31		
9-64-bldg.	BDC-05-07	25.30			11.29	2.70			11.96	2.03			11.92	2.07		
9-64-bldg.	BDC-05-08	26.75			12.07	2.60			12.72	1.95			12.64	2.03		
9-64-bldg.	BDC-05-09	24.55			11.71	2.70			12.37	2.04			12.31	2.10		
9-64-bldg.	BDC-05-10	24.57			11.70	2.71			12.36	2.05			12.31	2.10		
9-64-bldg.	BDC-05-11	24.85			11.91	2.74			12.59	2.06			12.51	2.14		
9-64-bldg.	BDC-05-12	24.87	12.58	2.14	12.01	2.71	12.53	2.19	12.88	1.84	12.78	1.94	12.61	2.11	12.53	2.19
9-64-bldg.	BDC-05-13	24.78			11.86	2.57			12.44	1.99			12.40	2.03		
9-64-bldg.	BDC-05-14	24.85			11.68	2.54			12.25	1.97			12.21	2.01		
9-64-bldg.	BDC-05-15	24.48			11.42	2.55			12.04	1.93			12.07	1.90		
9-64-bldg.	BDC-05-16	24.89	12.04	2.03	11.60	2.47	12.00	2.07	12.16	1.91	12.25	1.82	12.19	1.88	12.04	2.03
9-64-bldg.	BDC-05-17	24.82			11.83	2.42			12.34	1.91			12.30	1.95		
9-64-bldg.	BDC-05-18	24.69	11.51	2.28	11.16	2.63	11.62	2.17	11.71	2.08	11.90	1.89	11.72	2.07	11.63	2.16
9-64-bldg.	BDC-05-19	24.85	12.47	2.09	11.91	2.65	12.43	2.13	12.58	1.98	12.68	1.88	12.52	2.04	12.44	2.12
9-64-bldg.	BDC-05-20	24.80	12.45	1.89	11.95	2.39	12.28	2.06	12.46	1.88	12.55	1.79	12.38	1.96	12.41	1.93
9-64-bldg.	BDC-05-21	24.86	12.29	1.90	11.79	2.40	12.15	2.04	12.30	1.89	12.42	1.77	12.26	1.93	12.25	1.94

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

			August 2014		May 2014		Feb 2014		Nov 2013		August 2013		May 2013		Feb 2013	
Well Location / Bldg.	*Well ID No.*	*Well Depth*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*	*Depth to Water*	*Water Elevation*
9-64-bldg.	BDC-05-22	25.07	12.25	1.91	11.75	2.41	12.08	2.08	12.25	1.91	12.38	1.78	12.22	1.94	12.18	1.98
9-64-bldg.	BDC-05-23	25.10	12.81	1.65	12.36	2.10	12.51	1.95	12.74	1.72	12.83	1.63	12.70	1.76	12.56	1.90
9-64-bldg.	BDC-05-24	24.73	12.12	2.07	11.64	2.55	12.04	2.15	12.22	1.97	12.34	1.85	12.19	2.00	12.09	2.10
9-60 bldg.	BDC-101	18.42	12.08	2.39	11.22	3.25	11.97	2.50	11.99	2.48	12.27	2.20	11.99	2.48	11.77	2.70
9-60 bldg.	BDC-102	18.83	11.87	2.40	10.97	3.30	11.73	2.54	11.75	2.52	12.04	2.23	11.79	2.48	11.55	2.72
9-60 bldg.	BDC-103	18.51	11.88	2.46	10.85	3.49	11.75	2.59	11.66	2.68	12.06	2.28	11.71	2.63	11.43	2.91
9-60 bldg.	BDC-104	18.90	11.67	2.49	10.66	3.50	11.45	2.71	11.51	2.65	11.87	2.29	11.51	2.65	11.24	2.92
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														

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	Nov 2012		May 2012		Nov 2011		July 2011		May 2011		Nov 2010		May 2010		Nov 2009		May 2009	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-101-bldg.	MW-6A	24.25	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
9-101-bldg.	MW-6B	27.20	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
9-101-bldg.	MW-6C	40.55															12.72	2.35	13.05	2.02
9-101-bldg.	MW-8C	40.20															12.70	2.22	13.01	1.91
9-101-bldg.	MW-9A	21.30	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
9-101-bldg.	MW-9B	26.90															12.30	2.29	12.64	1.95
9-101-bldg.	MW-9C	38.80															12.40	2.26	12.67	1.99
9-101-bldg.	MW-9D	56.00															12.43	2.23	12.79	1.87
9-101-bldg.	MW-10A	20.20	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
9-101-bldg.	MW-10C	40.40	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
9-101-bldg.	MW-11A	19.90	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
9-101-bldg.	MW-12A	20.20	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
9-101-bldg.	MW-13A	19.37	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
9-101-bldg.	MW-13C	35.62	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
9-101-bldg.	MW-14A	19.00	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
9-101-bldg.	MW-14C	33.30	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
9-101-bldg.	MW-14E	82.10															7.20	6.98	7.55	6.63
9-101-bldg.	MW-15A	20.70	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
9-101-bldg.	MW-15C	34.35	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
9-101-bldg.	MW-15D	51.80															12.02	2.39	12.78	1.63
9-101-bldg.	MW-16A	20.55	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
9-101-bldg.	MW-16C	38.30	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
9-101-bldg.	MW-17A	19.00	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
9-101-bldg.	MW-17C	35.00																		
9-101-bldg.	MW-17D	52.50																		
9-101-bldg.	MW-18A	20.02	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
9-101-bldg.	MW-18C	34.55															12.36	2.27	12.66	1.97
9-101-bldg.	MW-18D	52.85																		
9-101-bldg.	MW-19A	16.86															10.11	2.12	10.49	1.74
9-101-bldg.	MW-19C	33.92															9.98	2.25	10.44	1.79
9-101-bldg.	MW-19D	51.86																		
9-101-bldg.	MW-20A	19.34															12.37	1.94	12.56	1.75
9-101-bldg.	MW-20C	35.32	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
9-101-bldg.	MW-20D	50.15																		
9-101-bldg.	MW-22A	19.20	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
9-101-bldg.	MW-23A	19.50															11.86	2.41	13.27	1.00
9-101/9-50 bldg.	MW-21A	19.90	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	12.31	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
9-64-bldg.	BDC-05-03	25.47	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
9-64-bldg.	BDC-05-04	25.36	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
9-64-bldg.	BDC-05-05	24.18	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
9-64-bldg.	BDC-05-07	25.30	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
9-64-bldg.	BDC-05-08	26.75	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
9-64-bldg.	BDC-05-09	24.55	12.36	2.05	11.90	2.51	12.68	1.73	12.27	2.13										
9-64-bldg.	BDC-05-10	24.57	12.30	2.11	11.95	2.46	12.74	1.67	12.27	2.14										
9-64-bldg.	BDC-05-11	24.85	12.55	2.10	12.13	2.52	12.92	1.73	12.60	2.05										
9-64-bldg.	BDC-05-12	24.87	12.66	2.06	12.24	2.48	13.00	1.72	12.57	2.15										
9-64-bldg.	BDC-05-13	24.78	12.44	1.99	12.02	2.41	12.78	1.65	12.35	2.08										
9-64-bldg.	BDC-05-14	24.85	12.29	1.93	11.83	2.39	12.55	1.67	12.23	1.99										
9-64-bldg.	BDC-05-15	24.48	11.97	2.00	11.63	2.34	12.34	1.63	11.95	2.02										
9-64-bldg.	BDC-05-16	24.89	12.09	1.98	11.78	2.29	12.44	1.63	12.05	2.02										
9-64-bldg.	BDC-05-17	24.82	12.27	1.98	11.65	2.60	12.60	1.65	12.27	1.98										
9-64-bldg.	BDC-05-18	24.69	11.75	2.04	11.34	2.45	12.10	1.69	11.84	1.95										
9-64-bldg.	BDC-05-19	24.85	12.60	1.96	12.15	2.41	12.90	1.66	12.59	1.97										
9-64-bldg.	BDC-05-20	24.80	12.44	1.90	12.08	2.26	12.75	1.59	12.47	1.87										
9-64-bldg.	BDC-05-21	24.86	12.30	1.89	11.94	2.25	12.59	1.60	12.34	1.85										

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	Nov 2012		May 2012		Nov 2011		July 2011		May 2011		Nov 2010		May 2010		Nov 2009		May 2009	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-64-bldg.	BDC-05-22	25.07	12.24	1.92	11.87	2.29	12.54	1.62	12.27	1.89										
9-64-bldg.	BDC-05-23	25.10	12.74	1.72	12.39	2.07	13.08	1.38	12.79	1.67										
9-64-bldg.	BDC-05-24	24.73	12.20	1.99	11.82	2.37	12.59	1.60	12.28	1.91										
9-60 bldg.	BDC-101	18.42	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
9-60 bldg.	BDC-102	18.83	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
9-60 bldg.	BDC-103	18.51	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
9-60 bldg.	BDC-104	18.90	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
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																		

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	Nov 2008		May 2008		Nov 2007		May 2007		February 2007		Nov 2006		Aug 2006		May 2006		February 2006	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-101-bldg.	MW-6A	24.25	12.79	2.01	12.87	1.93	13.08	1.72	12.97	1.83	12.42	2.38	12.30	2.50	13.16	1.64	12.77	2.03	12.42	2.38
9-101-bldg.	MW-6B	27.20	13.12	1.97	13.21	1.88	13.46	1.63	13.32	1.77	12.75	2.34	12.67	2.42	13.50	1.59	13.09	2.00	12.75	2.34
9-101-bldg.	MW-6C	40.55	13.06	2.01	13.13	1.94	13.41	1.66	13.27	1.80	12.69	2.38	12.65	2.42	13.41	1.66	13.07	2.00	12.71	2.36
9-101-bldg.	MW-8C	40.20	12.88	2.04	13.16	1.76	13.28	1.64	13.00	1.92			12.21	2.71			13.18	1.74		
9-101-bldg.	MW-9A	21.30	12.69	2.05	12.93	1.81	13.07	1.67	12.90	1.84	12.36	2.38	12.12	2.62	13.05	1.69	13.00	1.74	12.37	2.37
9-101-bldg.	MW-9B	26.90	12.68	1.91	12.75	1.84	12.91	1.68	12.71	1.88	12.19	2.40	11.95	2.64	12.87	1.72	13.81	0.78	12.19	2.40
9-101-bldg.	MW-9C	38.80	12.66	2.00	12.82	1.84	13.02	1.64	12.81	1.85	12.20	2.46	12.05	2.61	13.01	1.65	12.91	1.75	12.26	2.40
9-101-bldg.	MW-9D	56.00	12.78	1.88	12.90	1.76	13.56	1.10	12.88	1.78			12.30	2.36			13.15	1.51		
9-101-bldg.	MW-10A	20.20	12.68	2.01	12.89	1.80	13.05	1.64	12.72	1.97	12.35	2.34	12.06	2.63	12.88	1.81	12.98	1.71	11.93	2.76
9-101-bldg.	MW-10C	40.40	12.62	2.00	12.78	1.84	12.96	1.66	12.77	1.85			11.99	2.63			12.88	1.74		
9-101-bldg.	MW-11A	19.90	12.81	2.07	13.16	1.72	13.16	1.72	12.96	1.92			11.85	3.03			12.80	2.08		
9-101-bldg.	MW-12A	20.20	12.91	1.92	13.22	1.61	13.24	1.59	13.00	1.83			11.89	2.94			12.97	1.86		
9-101-bldg.	MW-13A	19.37	12.25	1.89	12.62	1.52	12.42	1.72	12.33	1.81			11.50	2.64			12.48	1.66		
9-101-bldg.	MW-13C	35.62	12.12	1.90	12.46	1.56	12.29	1.73	12.20	1.82			11.35	2.67			12.33	1.69		
9-101-bldg.	MW-14A	19.00	12.50	1.87	12.64	1.73	12.55	1.82	12.73	1.64	12.03	2.34	11.46	2.91	12.83	1.54	12.59	1.78	11.95	2.42
9-101-bldg.	MW-14C	33.30	12.08	1.89	12.14	1.83	12.00	1.97	12.32	1.65			11.72	2.25			12.26	1.71		
9-101-bldg.	MW-14E	82.10	7.51	6.67	8.07	6.11	6.83	7.35	7.59	6.59			6.71	7.47			8.78	5.40		
9-101-bldg.	MW-15A	20.70	12.31	1.86	12.35	1.82	12.24	1.93	12.52	1.65			11.93	2.24			12.05	2.12		
9-101-bldg.	MW-15C	34.35	12.23	1.94	12.50	1.67	12.30	1.87	12.55	1.62			11.91	2.26			12.37	1.80		
9-101-bldg.	MW-15D	51.80	12.47	1.94	12.68	1.73	12.53	1.88	12.76	1.65			12.14	2.27			12.52	1.89		
9-101-bldg.	MW-16A	20.55	12.95	2.04	13.17	1.82	12.53	2.46	13.11	1.88			12.05	2.94			13.04	1.95		
9-101-bldg.	MW-16C	38.30	13.13	1.91	13.34	1.70	13.33	1.71	13.23	1.81			12.22	2.82			13.23	1.81		
9-101-bldg.	MW-17A	19.00	12.80	2.00	13.07	1.73	13.00	1.80	12.80	2.00			12.04	2.76			12.85	1.95		
9-101-bldg.	MW-17C	35.00																		
9-101-bldg.	MW-17D	52.50																		
9-101-bldg.	MW-18A	20.02	12.37	1.93	12.72	1.58	12.46	1.84	12.45	1.85			11.57	2.73			12.43	1.87		
9-101-bldg.	MW-18C	34.55	12.67	1.96	12.98	1.65	12.88	1.75	12.74	1.89			11.85	2.78			12.70	1.93		
9-101-bldg.	MW-18D	52.85																		
9-101-bldg.	MW-19A	16.86	10.47	1.76	10.49	1.74	10.68	1.55	10.55	1.68	9.92	2.31	9.59	2.64	10.77	1.46	10.44	1.79	10.22	2.01
9-101-bldg.	MW-19C	33.92	10.33	1.90	10.41	1.82	10.59	1.64	10.50	1.73			9.50	2.73			10.32	1.91		
9-101-bldg.	MW-19D	51.86																		
9-101-bldg.	MW-20A	19.34	12.69	1.62	12.60	1.71	12.76	1.55	12.30	2.01			12.10	2.21			12.09	2.22		
9-101-bldg.	MW-20C	35.32	12.13	2.02	12.50	1.65	12.39	1.76	12.28	1.87			11.67	2.48			12.05	2.10		
9-101-bldg.	MW-20D	50.15																		
9-101-bldg.	MW-22A	19.20	12.35	1.90	12.50	1.75	12.25	2.00	12.64	1.61	11.90	2.35	12.11	2.14	12.77	1.48	12.41	1.84	12.25	2.00
9-101-bldg.	MW-23A	19.50	12.67	1.60	12.67	1.60	12.83	1.44	12.90	1.37	12.03	2.24	13.02	1.25	12.94	1.33	12.49	1.78	12.44	1.83
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	12.20	2.21	12.28	2.09	12.31	2.06	12.23	2.14			11.53	2.84			12.21	2.16		
9-64-bldg.	BDC-05-03	25.47	12.28	2.13	12.47	1.94	12.51	1.90	12.45	1.96			11.75	2.66			12.40	2.01		
9-64-bldg.	BDC-05-04	25.36	12.35	2.24	12.58	2.01	12.57	2.02	12.54	2.05			11.85	2.74			12.54	2.05		
9-64-bldg.	BDC-05-05	24.18	12.00	2.44	12.18	2.26	12.30	2.14	12.07	2.37			11.51	2.93			12.16	2.28		
9-64-bldg.	BDC-05-07	25.30	11.80	2.19	12.02	1.97	12.03	1.96	11.96	2.03			11.27	2.72			11.94	2.05		
9-64-bldg.	BDC-05-08	26.75	12.57	2.10																
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																		

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	Nov 2008		May 2008		Nov 2007		May 2007		February 2007		Nov 2006		Aug 2006		May 2006		February 2006	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-64-bldg.	BDC-05-22	25.07																		
9-64-bldg.	BDC-05-23	25.10																		
9-64-bldg.	BDC-05-24	24.73																		
9-60 bldg.	BDC-101	18.42	11.95	2.52	12.29	2.18	12.22	2.25	12.13	2.34			11.42	3.05			12.07	2.40		
9-60 bldg.	BDC-102	18.83	11.67	2.60	12.08	2.19	11.86	2.41	11.89	2.38			11.13	3.14			11.85	2.42		
9-60 bldg.	BDC-103	18.51	11.68	2.66	12.02	2.32	11.93	2.41	11.87	2.47			11.10	3.24			11.78	2.56		
9-60 bldg.	BDC-104	18.90	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																		

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	November 2005		August 2005		May 2005		February 2005		October 2004		August 2004		May 2004		November 2003		June 2003		December 2002	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-101-bldg.	MW-6A	24.25	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	13.15	1.94	13.35	1.74	12.88	2.21	12.97	2.12	13.25	1.84	13.40	1.69	13.00	1.83	12.88	1.95	13.30	1.53	13.01	1.82
9-101-bldg.	MW-6C	40.55	13.14	1.93	13.32	1.75	12.87	2.20	12.90	2.17	13.18	1.89	13.37	1.70	13.14	1.85	13.03	1.96	13.44	1.55	13.16	1.83
9-101-bldg.	MW-8C	40.20	13.00	1.92			12.64	2.28			12.91	2.01			13.11	1.81	13.11	1.81	13.39	1.53	13.19	1.73
9-101-bldg.	MW-9A	21.30	12.73	2.01	13.08	1.66	12.53	2.21	12.51	2.23	12.92	1.82	13.05	1.69	12.82	1.82	12.78	1.86	13.00	1.64	12.90	1.74
9-101-bldg.	MW-9B	26.90	12.69	1.90	12.90	1.69	12.17	2.42	10.80	3.79	12.76	1.83	12.90	1.69	12.77	1.95	12.82	1.90	13.08	1.64	12.96	1.76
9-101-bldg.	MW-9C	38.80	12.69	1.97	12.93	1.73	12.55	2.11	12.46	2.20	12.87	1.79	13.01	1.65	12.85	1.83	12.77	1.91	13.09	1.59	12.90	1.78
9-101-bldg.	MW-9D	56.00	12.90	1.76			12.90	1.76			13.92	0.74			12.92	1.74	13.04	1.62	13.39	1.27	13.17	1.49
9-101-bldg.	MW-10A	20.20	12.73	1.96	12.85	1.84	12.52	2.17	12.58	2.11	12.95	1.74	13.05	1.64	12.93	1.76	12.83	1.86	13.08	1.61	13.03	1.66
9-101-bldg.	MW-10C	40.40	12.63	1.99			12.45	2.17			12.74	1.88			12.80	1.82	12.71	1.91	12.97	1.65	12.90	1.72
9-101-bldg.	MW-11A	19.90	12.92	1.96			12.42	2.46			12.78	2.10			13.12	1.76	12.91	1.97	13.14	1.74	13.13	1.75
9-101-bldg.	MW-12A	20.20	12.98	1.85			12.58	2.25			12.86	1.97			13.21	1.62	13.00	1.83	13.23	1.60	13.20	1.63
9-101-bldg.	MW-13A	19.37	12.26	1.88			11.97	2.17			12.35	1.79			12.47	1.67	12.18	1.96	12.49	1.65	12.38	1.76
9-101-bldg.	MW-13C	35.62	12.10	1.92			11.78	2.24			12.19	1.83			12.35	1.67	12.02	2.00	12.30	1.72	12.22	1.80
9-101-bldg.	MW-14A	19.00	12.39	1.98	12.56	1.81	12.35	2.02	12.38	2.09	12.60	1.87	12.94	1.53	12.71	1.76	12.57	1.90	12.91	1.56	12.70	1.77
9-101-bldg.	MW-14C	33.30	12.13	1.84			11.84	2.13			12.09	1.88			12.16	1.81	12.07	1.90	12.43	1.54	12.18	1.79
9-101-bldg.	MW-14E	82.10	7.87	6.31			7.29	6.89			7.58	6.60			6.94	7.24	7.26	6.92	8.56	5.62	7.69	6.49
9-101-bldg.	MW-15A	20.70	12.42	1.75			11.74	2.43			12.17	2.00			12.67	1.50	12.36	1.81	12.57	1.60	12.55	1.62
9-101-bldg.	MW-15C	34.35	12.50	1.67			12.02	2.15			12.31	1.86			12.72	1.45	12.37	1.80	12.56	1.61	12.47	1.70
9-101-bldg.	MW-15D	51.80	12.63	1.78			12.20	2.21			12.56	1.85			12.88	1.53	12.64	1.77	12.41	2.00	12.80	1.61
9-101-bldg.	MW-16A	20.55	13.05	1.94			12.67	2.32			12.97	2.02			13.19	1.80	12.96	2.03	13.35	1.64	13.03	1.96
9-101-bldg.	MW-16C	38.30	13.22	1.82			12.83	2.21			13.15	1.89			13.38	1.66	13.15	1.89	13.51	1.53	13.33	1.71
9-101-bldg.	MW-17A	19.00	12.74	2.30							12.81	1.99			13.05	1.75	12.83	1.97	13.10	1.70	12.99	1.81
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	12.44	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	12.72	1.91			12.36	2.27			12.75	1.88			12.84	1.79	12.62	2.01	12.89	1.74	12.82	1.81
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	10.43	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	10.36	1.87			10.22	2.01			10.43	1.80			10.22	2.01	10.31	1.92	10.55	1.68	10.41	1.82
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	12.68	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	12.30	1.85			11.90	2.25			12.39	1.76			12.66	1.49	12.24	1.91	12.48	1.67	12.26	1.89
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	12.55	1.70	12.81	1.44	12.38	1.87														
9-101-bldg.	MW-23A	19.50	12.78	1.49	13.73	0.54	13.55	0.72														
9-101/9-50 bldg.	MW-21A	19.90																			12.79	1.66
9-101/9-50 bldg.	MW-21C	34.00																			10.53	1.67
9-64-bldg.	BDC-05-02	25.35	12.21	2.16			11.86	2.51			12.40	1.97			12.24	2.13	12.08	2.29	12.47	1.90	12.40	1.97
9-64-bldg.	BDC-05-03	25.47	12.43	1.98			12.07	2.34			12.60	1.81			12.46	1.95	12.28	2.13	12.66	1.75	12.60	1.81
9-64-bldg.	BDC-05-04	25.36	12.52	2.07			12.17	2.42			12.72	1.87			12.55	2.04	12.40	2.19	12.80	1.79	12.71	1.88
9-64-bldg.	BDC-05-05	24.18	12.16	2.28			11.87	2.57			12.41	2.03			12.12	2.32	12.13	2.31	12.51	1.93	12.42	2.02
9-64-bldg.	BDC-05-07	25.30	11.96	2.03			11.59	2.40			12.14	1.85			11.97	2.02	11.81	2.18	12.18	1.81	12.11	1.88
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																				

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	November 2005		August 2005		May 2005		February 2005		October 2004		August 2004		May 2004		November 2003		June 2003		December 2002	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-64-bldg.	BDC-05-22	25.07																				
9-64-bldg.	BDC-05-23	25.10																				
9-64-bldg.	BDC-05-24	24.73																				
9-60 bldg.	BDC-101	18.42	11.91	2.56			11.73	2.74			12.31	2.16			12.04	2.43	12.08	2.39	12.43	2.04	12.34	2.13
9-60 bldg.	BDC-102	18.83	11.79	2.48			11.53	2.74			11.97	2.30			11.84	2.43	11.82	2.45	12.24	2.03	12.14	2.13
9-60 bldg.	BDC-103	18.51	11.81	2.53			11.50	2.84			12.08	2.26			11.79	2.55	11.72	2.62	12.27	2.07	12.15	2.19
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					

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	June 2002		December 2001		June 2001		December 2000		June 2000		November 1999	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-101-bldg.	MW-6A	24.25												
9-101-bldg.	MW-6B	27.20	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	13.36	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	13.27	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	12.94	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	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	12.94	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	13.20	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	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	12.84	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	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	13.03	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	12.50	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	12.31	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	12.85	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	12.33	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	7.64	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	12.52	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	12.50	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	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	13.02	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	13.29	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	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	12.92	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	10.71	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	12.55	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	12.74	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	10.52	1.68	9.87	2.33	10.50	1.70						
9-64-bldg.	BDC-05-02	25.35	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	12.47	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	12.57	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	12.22	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	12.02	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												

DEVELOPMENTAL CENTER
CUMULATIVE WATER LEVEL MEASUREMENTS

Well Location / Bldg.	Well ID No.	Well Depth	June 2002		December 2001		June 2001		December 2000		June 2000		November 1999	
			Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation	Depth to Water	Water Elevation
9-64-bldg.	BDC-05-22	25.07												
9-64-bldg.	BDC-05-23	25.10												
9-64-bldg.	BDC-05-24	24.73												
9-60 bldg.	BDC-101	18.42	12.07	2.40	11.29	3.18	12.30	2.17						
9-60 bldg.	BDC-102	18.83	11.82	2.45	11.05	3.22	12.06	2.21						
9-60 bldg.	BDC-103	18.51	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:
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.
BDC05-02 was modifed 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.

DEVELOPMENTAL CENTER

GROUNDWATER MONITORING

APRIL 2016

GROUNDWATER SAMPLE COLLECTION FORMS

ANALYTICAL DATA

(DVD)

SWMU-20

(Groundwater Sample Collection Forms and Analytical Data)

Boeing Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: BOEING
Site Project: DEV. CTR.
Site Program/#: SWMU-20 43rd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: ☒ Boeing EHS ☐ Other (specify): _____
Sampler: CHARLES HARDY # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: H-VOCs 8260 (V.C. TCE DCE PCE)	57 METHANE, ETHANE ETHENE	91 TOC	55 SULFATE	(5) Remarks/Comments
MW-11A-160419	4.19.2016	500	Aq	3	X				4 TRIP BLANKS INCLUDED 3-22-2016
MW-10C-160419	4.19.2016	530	Aq	3	X				
MW-09A-160419	4.19.2016	600	Aq	9	X	X	X	X	0.8 mg/L
MW-16A-160419	4.19.2016	630	Aq	3	X				
MW-16C-160419	4.19.2016	700	Aq	3	X				
MW-17A-160419	4.19.2016	725	Aq	3	X				
MW-22A-160419	4.19.2016	800	Aq	9	X	X	X	X	1.0 mg/L
MW-13A-160419	4.19.2016	840	Aq	3	X				
MW-13C-160419	4.19.2016	905	Aq	3	X				
MW-20C-160419	4.19.2016	935	Aq	3	X				
MW-15C-160419	4.19.2016	1005	Aq	3	X				
MW-14C-160419	4.19.2016	1035	Aq	3	X				
MW-06A-160419	4.19.2016	1120	Aq	9	X	X	X	X	1.0 mg/L INJECTIONS*
MW-06B-160419	4.19.2016	1145	Aq	9	X	X	X	X	TOO THICK FLUIDS?
MW-DUP-160419	4.19.2016	—	Aq	3	X				

+4 TB's

(6) Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time
C. H. Hardy ARAM	1400 4.19.2016		(7)
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Relinquished by commercial carrier (circle): UPS FedEx (Other) LI COURIER
Temperature upon Receipt: _____ °C
Custody Seals Intact?: Yes No

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: Dev. Ctr. Area: 9-101 SWMU-20 CWA#7KX056

Event: 2nd Quarter 2016 labor Salco#1007645

SAMPLE I D: DC-MW- 06A - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 16, 2016 COC Time: 1120

Well Information

Well I. D.: MW- 06A Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.25 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.38 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.25 ft - 12.38 ft = 11.87 ft x 0.658 Liters/ft = 7.81 Liters

Purge Rate: 3.2 l. + 19 min. = _____ Liters/minute

Begin Purge: 11.01 time

End Purge: 1120 time

Volume Purged: 3.2 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
1103	≈ 250mL	19.3	2064	0.24	6.63	-24	
1105	≈ 650	19.1	2804 2235	0.10	6.66	-59	cola brown
1107	≈ 900	19.2	2894 2983	0.08	6.73	-78	
1109	≈ 1.2	19.1	2929	0.08	6.81	-90	
1111	≈ 1.7	19.1	2945	0.08	6.85	-97	
1113	≈ 1.9	19.1	2945	0.06	6.90	-104	
1115	≈ 2.3	19.1	2957	0.06	6.92	-108	
1117	≈ 2.65	19.0	2957	0.07	6.95	-113	
1119	≈ 3.05	19.0	2957	0.05	6.97	-117	
1120	≈ 3.2	19.1	2958	0.06	6.98	-118	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): INJECTION FLUID

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☐ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☒ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☒ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

(9)

Comments: * Hach Kit Fe++ 1.0 mg/L

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW-06B-160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: _____

Well Information

Well I. D.: MW-06B Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 10 (Sch.) Material: ☐ PVC, ☐ Stainless Steel, ☒ Other ~~GERP~~ FGRP

Total Depth of Well: 27.20 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.77 (ft.) Measured from: ☑ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 27.2 ft - 12.77 ft = 14.23 ft x 0.776 Liters/ft = 11.04 Liters

Purge Rate: _____ l. + _____ min. = _____ Liters/minute

Begin Purge: 1131 time

End Purge: 1145 time

Volume Purged: _____ Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
1133	≈ 100	20.2	750	0.18	7.02	-65	
1135	≈ 200	20.0	1,904	0.11	6.86	-61	
1137	≈ 300	19.9	2,841	0.08	6.80	-73	
1139	≈ 400	20.0	2,837	0.06	6.80	-75	
1141	≈ 500	20.0	2831	0.06	6.81	-75	
1143	≈ 650	20.1	2827	0.06	6.82	-77	
1145	≈ 750	20.1	2824	0.06	6.83	-78	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): ~~X~~ INJECTION FLUID

(9)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☐ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☒ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☒ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☒ Glass	none	☐ No	

Comments: ~~X~~ Hach Kit Fe++, TO THICK TO MEASURE

Signature: C.H.Hardy C.H. Hardy Date: APRIL 19, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW- 09A - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 600

Well Information

Well I. D.: MW- 09A Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 10 (Sch.) Material: ☐ PVC, ☐ Stainless Steel, ☒ Other FGRP

Total Depth of Well: 21.30 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.37 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 21.30 ft - 12.37 ft = 8.93 ft x 0.776 Liters/ft = 6.93 Liters

Purge Rate: 2.35 l. ÷ 16 min. = 0.147 Liters/minute

Begin Purge: 5:42 time

End Purge: 600 time

Volume Purged: 2.35 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
546	≈ 200 mL	17.1	909	0.22	6.78	-75	
548	≈ 350	17.0	1014	0.18	6.76	-88	
550	≈ 900	17.0	1012	0.18	6.76	-95	
552	≈ 1.15	17.0	1005	0.17	6.75	-98	
554	≈ 1.45	17.0	993	0.16	6.75	-101	
556	≈ 1.8	17.0	988	0.16	6.75	-103	
558	≈ 2.1	17.0	975	0.16	6.75	-104	
600	≈ 2.35	17.0	964	0.15	6.74	-105	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☐ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☒ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☒ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: Hach Kit Fe++ 0.05 mg/L 0.8 mg/L

Signature: C.H.Hardy C.H.Hardy Date: APRIL 19 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: Dev. Ctr. Area: 9-101 SWMU-20 CWA#7KX056

Event: 2nd Quarter 2016 labor Salco#1007645

SAMPLE I D: DC-MW- 10c - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 5:34

Well Information

Well I. D.: MW- 10c Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 40.40 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.37 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 40.40 ft - 12.37 ft = 28.03 ft x 0.658 Liters/ft = 18.44 Liters

Purge Rate: 1.8 l. + 14 min. = _____ Liters/minute

Begin Purge: 5:16 time

End Purge: 5:30 time

Volume Purged: 1.8 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
518	≈ 10 Cell	16.2	338	2.11	6.90	-35	
520	≈ 300 ml2	17.8	1,557	0.97	6.60	-58	cola brown
522	≈ 600	17.5	1,700 1649	1.15	6.61	-62	
524	≈ 900	17.6	1,685	1.07	6.60	-62	
526	≈ 1.2	17.6	1,663	0.77	6.58	-62	
528	≈ 1.5	17.6	1,650	0.60	6.58	-63	
530	≈ 1.8	17.6	1,637	0.50	6.58	-64	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): No SURFACE TENSION mm BUBBLES IN VIALS

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: Hach Kit Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW- 11A - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 500

Well Information

Well I. D.: MW- 11A Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 19.90 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.47 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 19.90 ft - 12.47 ft = 7.43 ft x 0.658 Liters/ft = 4.89 Liters

Purge Rate: 4. l. + 21 min. = _____ Liters/minute

Begin Purge: 4:39 time

End Purge: 500 time

Volume Purged: 4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
441	≈ 200 mL	18.0	1151	1.24	7.31	-113	
443	≈ 600 mL	17.7	1056	1.36	6.99	-90	
445	≈ 1.05 L	17.7	1046	2.08	6.89	-76	
447	≈ 1.45	17.7	1034	2.74	6.85	-70	
449	≈ 1.9 L	17.7	1027 ✓	3.24	6.84	-67	
451	≈ 2.35	17.7	978	3.13	6.84 ✓	-67	
453	≈ 2.7+	17.7	975	2.76	6.84 ✓	-67	
455	≈ 3.15	17.7	966	2.34	6.85 ✓	-68	
457	≈ 3.55	17.7	965 ✓ OK	1.98	6.84 ✓	-69	
459	≈ 4.0	17.7	961 ✓	1.60	6.84 ✓	-69	
500	≈ 4.22	17.7	963 ✓	1.43	6.84 ✓	-70	
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit Fe++~~

Signature: C.H.Hardy C. H. Hardy Date: April 19, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

DUP

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW- 13A - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April 19, 2016 COC Time: _____

Well Information

Well I. D.: MW- 13A Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 19.37 (ft.) ☒ historical or ☐ measured

Present Water Level: 11.82 (ft.) Measured from: ☑ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 19.37 ft - 11.82 ft = 7.55 ft x 0.658 Liters/ft = 4.97 Liters

Purge Rate: 8.5 l. ÷ 20 min. = 0.175 Liters/minute

Begin Purge: 820 time

End Purge: 840 time

Volume Purged: 3.5 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
822	≈ full	16.5	479	1.26	8.00	-160	
824	≈ 500mL	16.5	242	1.49	7.95	-148	
826	≈ 850	16.5	190	1.52	7.80	-127	
828	≈ 1.25L	16.5	181	1.49	7.72	-116	
830	≈ 1.6	16.6	171	1.48	7.64	-103	
832	≈ 1.95	16.6	165 160	1.47 ✓	7.58	-93	
834	≈ 2.35	16.7	158	1.45 ✓	7.53	-85	
836	≈ 2.7	16.7	157	1.37 ✓	7.48	-78	
838	≈ 3.1	16.7	158	1.43 ✓	7.41	-69	
840	≈ 3.5	16.7	159	1.41 ✓	7.35 ✓	-62	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

DUP **Sample Description:** (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3 =6	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
~~2~~	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
~~2~~	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
~~2~~	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit Fe++~~

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW- 13c - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 905

Well Information

Well I. D.: MW- 13c Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 35.62 (ft.) ☒ historical or ☐ measured

Present Water Level: 11.71 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 35.62 ft - 11.71 ft = 23.91 ft x 0.658 Liters/ft = 15.73 Liters

Purge Rate: 3.0 l. + 16 min. = 0.1875 Liters/minute

Begin Purge: 849 time

End Purge: 905 time

Volume Purged: 3.0 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV Others (w/l ,ntu's)	Observations
851	≈ 200 mL	17.1	805	0.30	7.06	-45	
853	≈ 600	17.1	756	0.15	7.07	-56	
855	≈ 1.0 L	17.1	717	0.11	7.05	-60	
857	≈ 1.4 L	17.1	682	0.10	7.04 ✓	-62	
859	≈ 1.8	17.2	655	0.10 ✓	7.01 ✓	-64	
901	≈ 2.2	17.2	637	0.09	7.01 ✓	-66	
903	≈ 2.6	17.2	631	0.09	7.00 ✓	-67	
905	≈ 3.0	17.2	627	0.08	7.00	-68	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer,** ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
~~2~~	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
~~2~~	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
~~2~~	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	_ mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit~~ Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW-14c-160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 1035

Well Information

Well I. D.: MW- 14c Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 33.30 (ft.) ☒ historical or ☐ measured

Present Water Level: 11.78 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 33.30 ft - 11.78 ft = 21.52 ft x 0.658 Liters/ft = 14.16 Liters

Purge Rate: 3.7 l. ÷ 18 min. = 0.206 Liters/minute

Begin Purge: 1017 time

End Purge: 1035 time

Volume Purged: 3.7 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
1019	≈ 150 mL	22.7	1019	1.73	7.33	-84	
1021	≈ 600 mL	21.7	782	1.41	7.21	-70	
1023	≈ 1.0 L	21.4	702	1.14	7.04	-58	
1025	≈ 1.5 L	21.4	666 (646)	0.91	6.94	-51	
1027	≈ 1.9	21.4	651 (631)	0.76	6.88	-42	
1029	≈ 2.35	21.3	642	0.63	6.82	-46	
1031	≈ 2.8	21.4	637	0.52	6.78	-45	
1033	≈ 3.25	21.3	631 ✓OK	0.43	6.75	-44	
1035	≈ 3.7	21.4	629	0.36	6.71	-43	
	≈						
	≈						
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
~~2~~	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
~~2~~	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
~~2~~	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
~~0~~	mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit~~ Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW-15C-160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 15, 2016 COC Time: _____

Well Information

Well I. D.: MW-15C Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: Top of Casing Broken

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other CONC IN MONUMENT BUSH HAMMERED

Total Depth of Well: 34.35 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.45 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 34.35 ft - 12.45 ft = 21.9 ft x .0658 Liters/ft = 14.41 Liters

Purge Rate: 2.9 l. + 16 min. = .181 Liters/minute

Begin Purge: 949 time

End Purge: 1005 time

Volume Purged: 2.9 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other SWMU-9 SUMP

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV Others (w/l ,ntu's)	Observations
951	≈ 100 mL	23.3	880	.50	6.65	-23	
953	≈ 500	22.0	4,217	.16	6.48	-45	color BROWN
955	≈ 900	22.1	4,500	.11	6.57	-64	
957	≈ 1.3 L	22.0	4,534	.09	6.62	-72	
959	≈ 1.7	21.9	4,546	.08	6.66	-77	
1001	≈ 2.1	22.0	4540 ↓	.07 ↓	6.67 ↓	-80	
1003	≈ 2.5	22.1	4,537 ↓	.07	6.69 ↓	-83	
1005	≈ 2.9	22.0	4,511	.07	6.71	-85	
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer,** ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
~~2~~	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
~~2~~	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
~~2~~	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	_ mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit~~ Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW-16A-160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 630

Well Information

Well I. D.: MW-16A Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 20.55 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.60 (ft.) Measured from: ☑ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 20.55 ft - 12.60 ft = 7.95 ft x 0.658 Liters/ft = 5.23 Liters

Purge Rate: 1.8 l. + 12 min. = 0.150 Liters/minute

Begin Purge: 618 time

End Purge: 630 time

Volume Purged: 1.8 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
620	≈ ~~Focal~~	16.7	2959	7.26	6.41	-27	
622	≈ 300	17.0	6704	0.13	6.74	-134	cola brown
624	≈ ~~650~~	17.0	6706	0.14	6.80	-145	
626	≈ 1.0	17.0	6715	0.18	6.84	-156	
628	≈ 1.4	17.0	6707	0.19	6.88	-162	
630	≈ 1.8	17.0	6734	0.16	6.90	-168	
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
~~2~~	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
~~2~~	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
~~2~~	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit~~ Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW- 16C - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 700

Well Information

Well I. D.: MW- 16C Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 38.3 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.7 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 38.3 ft - 12.7 ft = 25.60 ft x 0.658 Liters/ft = 16.84 Liters

Purge Rate: 3.4 l. ÷ 20 min. = 0.170 Liters/minute

Begin Purge: 640 time

End Purge: 700 time

Volume Purged: 3.4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV Others (w/l ,ntu's)	Observations
642	≈ 150mL	17.3	2450	0.34	6.81	-79	
644	≈ 500 mL	17.4	1760	0.23	6.70	-60	
646	≈ 850	17.5	1359	0.21	6.62	-48	
648	≈ 1.2 L	17.5	1171	0.17	6.53	-39	
650	≈ 1.55	17.5	1072	0.16	6.46	-34	
652	≈ 1.9	17.5	1004 977	0.16	6.40	-29	
654	≈ 2.3	17.6	958 929	0.14	6.36	-26	
656	≈ 2.7	17.6	904 876	0.13	6.33	-24	
658	≈ 3.05	17.6	870	0.12	6.30 ✓	-22	
700	≈ 3.4	17.7	849	0.12	6.28 ✓	-21	
	≈						
	≈						
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☐ Glass	H3PO4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit~~ Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW- 17A - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 725

Well Information

Well I. D.: MW- 17A Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 19.0 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.28 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 19.0 ft - 12.28 ft = 6.72 ft x 0.658 Liters/ft = 4.42 Liters

Purge Rate: 2.25 l. ÷ 13 min. = 0.173 Liters/minute

Begin Purge: 712 time

End Purge: 725 time

Volume Purged: 2.25 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV Others (w/l ,ntu's)	Observations
714	≈ 200 mL	18.4	10,340	0.11	6.48	-113	
716	≈ 550	18.5	10,123	0.12	6.64	-146	
718	≈ 950	18.5	9,779	0.09	6.70	-160	
720	≈ 1.35L	18.5	9,498	0.08	6.73	-167	
722	≈ 1.7	18.5	9,273	0.07	6.75	-170	
724	≈ 2.05	18.5	9,104	0.07	6.77	-174	
725	≈ 2.25	18.5	9,035	0.08	6.78	-175	
728	≈						
730	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
~~2~~	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
~~2~~	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
~~2~~	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: ~~Hach Kit~~ Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: Dev. Ctr. Area: 9-101 SWMU-20 CWA#7KX056

Event: 2nd Quarter 2016 labor Salco#1007645

SAMPLE I D: DC-MW-20c-160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: _____

Well Information

Well I. D.: MW- 20c Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 35.32 (ft.) ☒ historical or ☐ measured

Present Water Level: 11.95 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 35.32 ft - 11.95 ft = 23.37 ft x 0.658 Liters/ft = 15.38 Liters

Purge Rate: 3.35 l. ÷ 16 min. = 0.210 Liters/minute

Begin Purge: 917 time

End Purge: 935 time

Volume Purged: 3.35 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV Others (w/l ,ntu's)	Observations
919	≈ 200mL	17.7	951	0.53	6.58	-26	
921	≈ 550	18.0	1283 1244	0.26	6.55	-27	cola brown
923	≈ 1.0	18.2	1176	0.28	6.58	-31	
925	≈ 1.4	18.2	1,138 1103	0.29	6.58 ✓	-31	
927	≈ 1.75	18.2	1,126	0.32 ✓	6.56 ✓	-30	
929	≈ 2.15	18.3	1,123	0.23 ✓	6.53 ✓	-28	
931	≈ 2.55	18.3	1,120	0.16 ✓	6.52 ✓	-29	
933	≈ 2.95	18.3	1,120 ✓	0.18 ✓	6.50 ✓	-29	
935	≈ 3.35	18.4	1,122	0.13	6.48 ✓	-29	
937	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☒ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☐ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☐ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☐ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: ~~Hach~~ Kit Fe++

Signature: C.H.Hardy C. H. Hardy Date: APRIL 19, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

43rd Sample event

Project Site: **Dev. Ctr.** Area: **9-101 SWMU-20** CWA#7KX056

Event: **2nd Quarter 2016** labor Salco#1007645

SAMPLE I D: DC-MW- 22A - 160419 (yymmdd)

Collector: Charles Hardy

Date Collected: April. 19, 2016 COC Time: 806

Well Information

Well I. D.: MW- 22A Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info. : Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 19.2 (ft.) ☒ historical or ☐ measured

Present Water Level: 12.12 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 19.20 ft - 12.12 ft = 7.08 ft x 0.658 Liters/ft = 3.95 Liters

Purge Rate: 1.7 l. + 12 min. = 0.142 Liters/minute

Begin Purge: 748 time

End Purge: 800 time

Volume Purged: 1.7 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum. ☐ Storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV Others (w/l ,ntu's)	Observations
750	≈ 200 mL	15.7	6,202	0.71	7.05	-100	
752	≈ 500	16.2	8,898	0.22	6.98	-134	
754	≈ 800	16.0	8,936	0.19	6.99	-144	
756	≈ 1.15	15.8	8,929	0.17	7.01	-153	
758	≈ 1.4 L	15.9	8,959	0.15	7.01	-158	
800	≈ 1.7	16.0	8,997	0.14	7.02	-163	
802	≈						
804	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer,** ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible Pump

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): No Surface Tension - Bubble in vial vials

(9)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H Cl	☐ No	4-VOC's 8260 V.C. TCE, PCE, cDCE (LLI code38).
2	40 mL	☒ Glass	H-Cl	☐ No	Ethene, Ethane, Methane 8310 modfy(LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☐ No	Total Organic Carbon Method 9060, (LLI code 91)
2	40 mL	☒ Glass	none	☐ No	Sulfate IC E300 (LLI code 55)
0	mL	☐ Glass	none	☐ No	

Comments: * Hach Kit Fe++ 1.0 mg/L

Signature: C.H.Hardy C. H. Hardy Date: April 19 2016 Continued on Back ☐

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Sample Container Record

Order Number: 185541
Order Date: 03/09/2016

Standard Frm#: 148643

Client: 13419
The Boeing Company
Boeing_DC: SWMU-20 s-ann

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 1

Number of Sample Locations: 15

One complete set of bottles listed below must be filled for each of the 15 sample location(s).

Sample Description	QC Type
MW-06a Water	
MW-06b Water	
MW-09a Water	
MW-10c Water	
MW-11a Water	
MW-13c Water	
MW-13a Water	
MW-14c Water	
MW-15c Water	
MW-16a Water	
MW-16c Water	
MW-17a Water	
MW-20c Water	
MW-22a Water	
MW-DUP Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
3	38	40 ml glass vial (GC/MS)	HCl	8260C Boeing 69	14 days

Group: 2

Number of Sample Locations: 4

One complete set of bottles listed below must be filled for each of the 4 sample location(s).

Sample Description	QC Type
MW-06a Water	
MW-06b Water	
MW-09a Water	
MW-22a Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
2	55	40 ml glass vial	None	Sulfate	28 days
2	57	40 ml glass vial	HCl	Volatile Headspace Hydrocarbon	14 days
2	91	40 ml amber vial	H3PO4	Total Organic Carbon	28 days

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185541
Order Date: 03/09/2016

Standard Frm#: 148643

Client: 13419
The Boeing Company
Boeing_DC: SWMU-20 s-ann

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 3

Number of Sample Locations: 2

Sample Description	QC Type
Trip Blank Water	Trip Blank

Count	Code	Description	Preservative	Analysis Name	Hold Time
2	38	40 ml glass vial (GC/MS)	HCl	8260C Boeing 69	14 days

Sample Acceptance Policy

Samples must be submitted in a manner that meets the criteria listed below. If these criteria are not met, the laboratory will contact the client to discuss how to proceed with testing. If the client decides to proceed with testing, a comment describing the variation will appear on the analytical report.

- Documentation must be complete and include: sample identification, the location, date and time of collection, collector's name or initials, preservation type, sample type, required analyses, and any special remarks concerning the sample.
- Proper sample labeling must include unique identification on a durable (water resistant) label using indelible ink.
- Samples must be collected in appropriate containers with sufficient volume to perform tests. The laboratory will provide appropriate bottleware.
- Samples must be shipped promptly to meet specified holding times with adequate packing materials to prevent damage during shipment and adequate wet ice to meet method temperature requirements (0-6°C, not frozen).

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

Report Date: May 05, 2016

Project: Boeing_DC: SWMU-20 s-ann

Submittal Date: 04/20/2016
Group Number: 1652430
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
MW-11A-160419 Water	8341826
MW-10C-160419 Water	8341827
MW-09A-160419 Water	8341828
MW-09A-160419 Water	8341829
MW-16A-160419 Water	8341830
MW-16C-160419 Water	8341831
MW-17A-160419 Water	8341832
MW-22A-160419 Water	8341833
MW-22A-160419 Water	8341834
MW-13A-160419 Water	8341835
MW-13C-160419 Water	8341836
MW-20C-160419 Water	8341837
MW-15C-160419 Water	8341838
MW-14C-160419 Water	8341839
MW-06A-160419 Water	8341840
MW-06A-160419 Water	8341841
MW-06B-160419 Water	8341842
MW-06B-160419 Water	8341843
MW-DUP-160419 Water	8341844
Trip Blank Water	8341845

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

Electronic Copy To	The Boeing Company	Attn: Lindsey E. Mahrt
Electronic Copy To	Landau	Attn: Chris Kimmel

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Respectfully Submitted,

Kay Hower
Manager

(510) 672-3979

Project Name: Boeing_DC: SWMU-20 s-ann
LL Group #: 1652430

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Preservation requirements were not met. Preservation requirements were not met.

Analysis Specific Comments:

SW-846 8260C, GC/MS Volatiles

Sample #s: 8341830, 8341832, 8341838, 8341840
A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.
Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Sample #s: 8341827
Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Sample #s: 8341833, 8341842
Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.
A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.

RSKSOP-175 modified, GC Miscellaneous

Sample #s: 8341834, 8341841, 8341843
The container used for this analysis was submitted with headspace.
Reporting limits were raised due to interference from the sample matrix.

Batch #: 161120098A (Sample number(s): 8341829, 8341834, 8341841, 8341843 UNSPK: P339642)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Methane

EPA 300.0, Wet Chemistry

Sample #s: 8341834

Reporting limits were raised due to interference from the sample matrix.

SM 5310 C-2000, Wet Chemistry

Batch #: 16117049505A (Sample number(s): 8341828, 8341833, 8341840, 8341842 UNSPK: 8341828 BKG: 8341828)

The recovery(ies) for the following analyte(s) in the MS was outside the acceptance window: Total Organic Carbon

Sample Description: MW-11A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341826
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 05:00 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2011A

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**20**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.4**		0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 14:48	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 14:48	Kerri E Legerlotz	1

Sample Description: MW-10C-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341827
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 05:30 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2010C

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.5**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 18:03	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 18:03	Kerri E Legerlotz	1

Sample Description: MW-09A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341828
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 06:00 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2009A

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.7**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**33.3**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 15:08	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 15:08	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16117049505A	04/26/2016 03:23	James S Mathiot	1

Sample Description: MW-09A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341829
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 06:00 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2009H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	**Ethane**	74-84-0	**34**		1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**18,000**	**E**	3.0	1
Trial ID: DL						
07105	Ethane	74-84-0	200	U	200	200
07105	Ethene	74-85-1	200	U	200	200
07105	**Methane**	74-82-8	**22,000**		600	200
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	MEE by RSK-175	RSKSOP-175 modified	1	161120098A	04/21/2016 15:49	Nicholas R Rossi	1
07105	MEE by RSK-175	RSKSOP-175 modified	2-DL	161120098A	04/22/2016 14:21	Nicholas R Rossi	200
00228	Sulfate	EPA 300.0	1	16117667901A	04/26/2016 18:17	Drew M Gerhart	1

Sample Description: MW-16A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341830
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 06:30 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2016A

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**10**	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.8**	0.2	1
11996	**Trichloroethene**	79-01-6	**0.7**	0.2	1
11996	Vinyl Chloride	75-01-4	0.2 U	0.2	1

A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 18:24	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 18:24	Kerri E Legerlotz	1

Sample Description: MW-16C-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341831
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 07:00 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2016C

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.9**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 15:40	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 15:40	Kerri E Legerlotz	1

Sample Description: MW-17A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341832
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 07:25 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2017A

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**8.0**		2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10

A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 21:03	Kerri E Legerlotz	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 21:03	Kerri E Legerlotz	10

Sample Description: MW-22A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341833
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 08:00 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2022A

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.5**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.

Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2,980**		100	100

Sample Comments

State of Washington Lab Certification No. C457
Preservation requirements were not met. The pH was out of range upon receipt at the laboratory and after adding the maximum amount of preservative, the pH was still out of range for TOC.
Preservation requirements were not met. Regulatory requirements were not met f or all bottles for the following D27/D29 analyses: 00273

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 19:19	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 19:19	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16117049505A	04/26/2016 04:03	James S Mathiot	100

Sample Description: MW-22A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341834
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 08:00 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
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Seattle WA 98124

2022V

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**15,000**		300	100

The container used for this analysis was submitted with headspace.
Reporting limits were raised due to interference from the sample matrix.

Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**1.9**	**J**	0.60	2

Reporting limits were raised due to interference from the sample matrix.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	MEE by RSK-175	RSKSOP-175 modified	1	161120098A	04/21/2016 16:06	Nicholas R Rossi	100
00228	Sulfate	EPA 300.0	2	16117667901A	05/04/2016 01:15	Drew M Gerhart	2

Sample Description: MW-13A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341835
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 08:40 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2013A

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**1.6**		0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 12:56	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 12:56	Kerri E Legerlotz	1

Sample Description: MW-13C-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341836
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 09:05 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2013C

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 13:16	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 13:16	Kerri E Legerlotz	1

Sample Description: MW-20C-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341837
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 09:35 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2020C

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.2**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.2**		0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 16:03	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 16:03	Kerri E Legerlotz	1

Sample Description: MW-15C-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341838
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 10:05 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2015C

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.2**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.6**		0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.5**		0.2	1

A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 19:39	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 19:39	Kerri E Legerlotz	1

Sample Description: MW-14C-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341839
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 10:35 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
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MC 1W-12
Seattle WA 98124

2014C

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.3**		0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 13:37	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 13:37	Kerri E Legerlotz	1

Sample Description: MW-06A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341840
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 11:20 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2006A

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**1**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.7**		0.2	1

A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**203**		10.0	10

Sample Comments

State of Washington Lab Certification No. C457
Preservation requirements were not met. Regulatory requirements were not met f or all bottles for the following D27/D29 analyses: 00273

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 20:00	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 20:00	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16117049505A	04/27/2016 02:48	James S Mathiot	10

Sample Description: MW-06A-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341841
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 11:20 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2006V

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**18,000**		300	100

The container used for this analysis was submitted with headspace.
Reporting limits were raised due to interference from the sample matrix.

Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	MEE by RSK-175	RSKSOP-175 modified	1	161120098A	04/22/2016 14:44	Nicholas R Rossi	100
00228	Sulfate	EPA 300.0	1	16117667901A	04/28/2016 00:08	Drew M Gerhart	1

Sample Description: MW-06B-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341842
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 11:45 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2006B

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	10
11996	Tetrachloroethene	127-18-4	2.0	U	2.0	10
11996	Trichloroethene	79-01-6	2.0	U	2.0	10
11996	Vinyl Chloride	75-01-4	2.0	U	2.0	10

Since the analyst observed that the sample foamed while purging, an anti-foaming agent was added to the sample so that it could be analyzed at a lower dilution factor.

A preserved vial was submitted for analysis. However, the pH at the time of analysis was 7.

Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**306**		10.0	10

Sample Comments

State of Washington Lab Certification No. C457
Preservation requirements were not met. Regulatory requirements were not met f
or all bottles for the following D27/D29 analyses: 00273

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161232AA	05/03/2016 00:08	Kevin A Sposito	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161232AA	05/03/2016 00:08	Kevin A Sposito	10
00273	Total Organic Carbon	SM 5310 C-2000	1	16117049505A	04/27/2016 03:01	James S Mathiot	10

Sample Description: MW-06B-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341843
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 11:45 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

2006V

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**17,000**		300	100
	The container used for this analysis was submitted with headspace. Reporting limits were raised due to interference from the sample matrix.					
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**0.30**	**J**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	MEE by RSK-175	RSKSOP-175 modified	1	161120098A	04/24/2016 09:28	Nicholas R Rossi	100
00228	Sulfate	EPA 300.0	1	16117667901A	04/28/2016 00:35	Drew M Gerhart	1

Sample Description: MW-DUP-160419 Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341844
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 04/19/2016 by CH

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

20-DU

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**1.6**		0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 13:57	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 13:57	Kerri E Legerlotz	1

Sample Description: Trip Blank Water
Boeing_DC: SWMU-20 s-ann

LL Sample # WW 8341845
LL Group # 1652430
Account # 13419

Project Name: Boeing_DC: SWMU-20 s-ann

Collected: 03/22/2016

Submitted: 04/20/2016 09:30
Reported: 05/05/2016 10:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

20-TB

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161231AA	05/02/2016 12:36	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161231AA	05/02/2016 12:36	Kerri E Legerlotz	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 10:38

Group Number: 1652430

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H161231AA	Sample number(s): 8341826-8341828,8341830-8341833,8341835-8341840,8341844-8341845		
cis-1,2-Dichloroethene	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Vinyl Chloride	0.2	U	0.2
Batch number: H161232AA	Sample number(s): 8341842		
cis-1,2-Dichloroethene	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Vinyl Chloride	0.2	U	0.2

Analysis Name	Result		MDL
	ug/l		ug/l
Batch number: 161120098A	Sample number(s): 8341829,8341834,8341841,8341843		
Ethane	1.0	U	1.0
Ethene	1.0	U	1.0
Methane	3.0	U	3.0

Analysis Name	Result		LOQ
	mg/l		mg/l
Batch number: 16117049505A	Sample number(s): 8341828,8341833,8341840,8341842		
Total Organic Carbon	1.0	U	1.0

Analysis Name	Result		MDL
	mg/l		mg/l
Batch number: 16117667901A	Sample number(s): 8341829,8341834,8341841,8341843		
Sulfate	0.30	U	0.30

LCS/LCSD

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: H161231AA	Sample number(s): 8341826-8341828,8341830-8341833,8341835-8341840,8341844-8341845								
cis-1,2-Dichloroethene	5.00	4.94	5.00	4.49	99	90	80-120	10	30
Tetrachloroethene	5.00	5.35	5.00	4.64	107	93	80-120	14	30
Trichloroethene	5.00	5.18	5.00	4.55	104	91	80-120	13	30
Vinyl Chloride	5.00	4.73	5.00	4.71	95	94	62-128	0	30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 10:38

Group Number: 1652430

LCS/LCSD (continued)

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: H161232AA	Sample number(s): 8341842								
cis-1,2-Dichloroethene	5.00	5.14	5.00	5.14	103	103	80-120	0	30
Tetrachloroethene	5.00	5.15	5.00	5.23	103	105	80-120	2	30
Trichloroethene	5.00	5.21	5.00	5.26	104	105	80-120	1	30
Vinyl Chloride	5.00	4.73	5.00	4.82	95	96	62-128	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 161120098A	Sample number(s): 8341829,8341834,8341841,8341843								
Ethane	59.2	62.29			105		85-115		
Ethene	60.4	62.52			104		83-115		
Methane	61.3	62.98			103		85-115		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16117049505A	Sample number(s): 8341828,8341833,8341840,8341842								
Total Organic Carbon	25	23.1			92		91-113		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16117667901A	Sample number(s): 8341829,8341834,8341841,8341843								
Sulfate	7.50	7.44	7.50	7.41	99	99	90-110	0	20

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 161120098A	Sample number(s): 8341829,8341834,8341841,8341843 UNSPK: P339642									
Ethane	1.0 U	59.2	52.38	59.2	55.3	88	93	34-153	5	30
Ethene	2.02	60.4	57.98	60.4	59.81	93	96	35-162	3	30
Methane	1515.34	61.3	1497.56	61.3	1196.32	-28 (2)	-519 (2)	35-157	22	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 16117049505A	Sample number(s): 8341828,8341833,8341840,8341842 UNSPK: 8341828									
Total Organic Carbon	33.35	10	41.69			83*		91-113		
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 16117667901A	Sample number(s): 8341829,8341834,8341841,8341843 UNSPK: P347236									
Sulfate	16	50	68.32			105		90-110		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 10:38

Group Number: 1652430

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Batch number: 16117049505A	Sample number(s): 8341828,8341833,8341840,8341842		BKG: 8341828	
Total Organic Carbon	33.35	33.28	0	3
	mg/l	mg/l		
Batch number: 16117667901A	Sample number(s): 8341829,8341834,8341841,8341843		BKG: P347236	
Sulfate	16	16.11	1 (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C VC, TCE, PCE, cis1,2-DCE
Batch number: H161231AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8341826	101	105	99	93
8341827	98	100	100	93
8341828	108	107	95	95
8341830	97	100	98	92
8341831	101	103	99	94
8341832	103	102	97	93
8341833	105	107	95	96
8341835	101	102	101	94
8341836	102	105	98	95
8341837	100	101	100	94
8341838	108	109	94	95
8341839	102	102	99	93
8341840	103	101	96	93
8341844	102	99	99	91
8341845	100	102	101	91
Blank	103	102	96	95
LCS	102	101	98	94
LCSD	105	102	96	96
Limits:	77-114	74-113	77-110	78-110

Analysis Name: 8260C VC, TCE, PCE, cis1,2-DCE
Batch number: H161232AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8341842	100	101	99	92
Blank	105	103	97	93
LCS	108	111	95	96
LCSD	106	108	95	94
Limits:	77-114	74-113	77-110	78-110

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Group Number: 1652430
Reported: 05/05/2016 10:38

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: MEE by RSK-175
Batch number: 161120098A

	Propene
8341829	72
8341829DL	98
8341834	98
8341841	104
8341843	88
Blank	101
LCS	96
MS	94
MSD	91
Limits:	44-123

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Boeing Chain of Custody

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Acct. # 13419 For Eurofins Lancaster Laboratories use only Group # 1652430 Sample # 8341826-45

Please print. Instructions on reverse side correspond.

1 Client Information #13419

Site Location: BOEING
Site Project: DEV. CTR.
Site Program/#: SWMU-20 43rd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: CHARLES HARDY # of Coolers: 1

4 Analyses Requested

5 Remarks/Comments: 4 TRIP BLANKS INCLUDED 3-22-2016; Fe+2

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	33 H-VOCs 8260 V.C. TCE PCE DCE	57 METHANE, ETHANE ETHENE	91 TOC	55 SULFATE					Remarks/Comments
MW-11A-160419	4.19.2016	500	Aq	3	X								
MW-10C-160419	4.19.2016	530	Aq	3	X								
MW-09A-160419	4.19.2016	600	Aq	9	X	X	X	X					0.8 mg/L
MW-16A-160419	4.19.2016	630	Aq	3	X								
MW-16C-160419	4.19.2016	700	Aq	3	X								
MW-17A-160419	4.19.2016	725	Aq	3	X								
MW-22A-160419	4.19.2016	800	Aq	9	X	X	X	X					1.0 mg/L
MW-13A-160419	4.19.2016	840	Aq	3	X								
MW-13C-160419	4.19.2016	905	Aq	3	X								
MW-20C-160419	4.19.2016	935	Aq	3	X								
MW-15C-160419	4.19.2016	1005	Aq	3	X								
MW-14C-160419	4.19.2016	1035	Aq	3	X								1.0 mg/L INJECTION
MW-06A-160419	4.19.2016	1120	Aq	9	X	X	X	X					TOO THICK FLUIDS?
MW-06B-160419	4.19.2016	1145	Aq	9	X	X	X	X					
MW-DUP-160419	4.19.2016	—	Aq	3	X								

+4 TB's.

6 Turnaround Time Requested (please circle)

(Standard) 72 hour · 5 day 48 hour · 4 day 24 hour

Date needed: ______

Relinquished by:	Date/Time	Received by:	Date/Time
C. H. Hardy ARAN	4/19/2016 1400		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	4/20/16 0935
Relinquished by commercial carrier (circle): UPS FedEx (Other) ELI COURIER		Temperature upon Receipt: 0.5-2.8 °C	
		Custody Seals Intact?: (Yes) No	

7

Issued by Dept. 40 Management 7063.02

Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300

The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client.

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 143541

Group Number(s): 1652430

Client: Chevron

Boeing

Delivery and Receipt Information

Delivery Method:	SeaTac	Arrival Timestamp:	04/20/2016 9:15
Number of Packages:	6	Number of Projects:	4

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Krista Abel (3058) at 12:17 on 04/20/2016

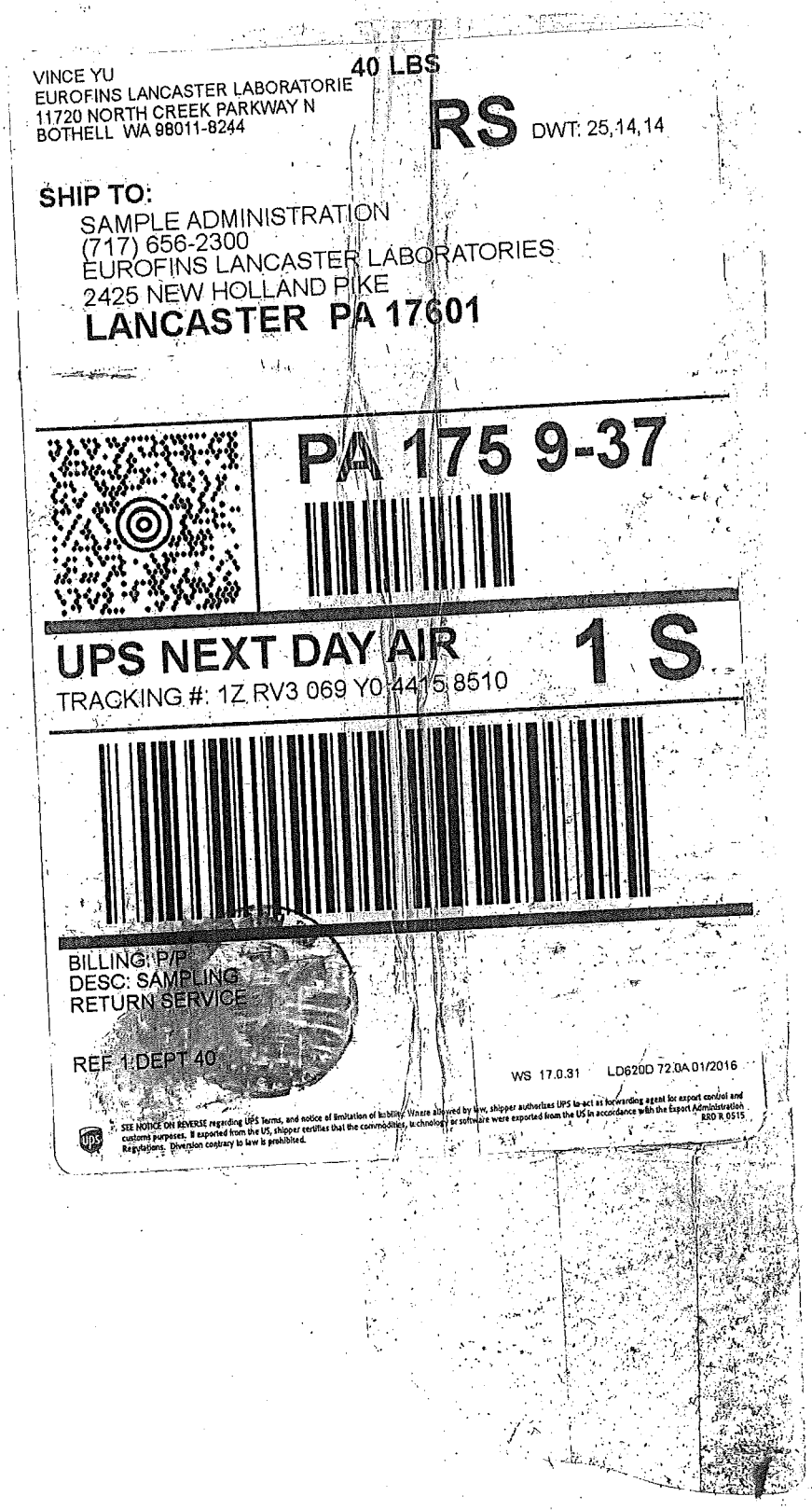
Samples Chilled Details: Boeing

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.8	DT	Wet	Y	Bagged	N
2	DT146	1.4	DT	Wet	Y	Bagged	N
3	DT146	1.1	DT	Wet	Y	Bagged	N
4	DT146	0.5	DT	Wet	Y	Bagged	N
5	DT146	1.3	DT	Wet	Y	Bagged	N
6	DT146	2.8	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

1652430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EUROFINS LANCASTER LABORATORIE
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BOTHELL WA 98011-8244
40 LBS
RS
DWT: 25,14,14
SHIP TO:
SAMPLE ADMINISTRATION
(717) 656-2300
EUROFINS LANCASTER LABORATORIES
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LANCASTER PA 17601
PA 175 9-37
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1 S
TRACKING #: 1Z RV3 069 Y0 44 15 8510
BILLING: P/P
DESC: SAMPLING
RETURN SERVICE
REF 1:DEPT 40
WS 17.0.31
LD620D 72.0A 01/2016
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RRD R 0515

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

SWMU-17

(Groundwater Sample Collection Forms and Analytical Data)

Boeing Chain of Custody

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For Eurofins Lancaster Laboratories use only
Acct. # ______ Group # ______ Sample # ______
Please print. Instructions on reverse side correspond.

(1) #13419 **Client Information**

Site Location: BOEING
Site Project: DEV. CTR
Site Program/#: SWMU-17 SHORT LIST 52nd EVENT
Boeing PM: JAME BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: CHARLES HARDY # of Coolers: 1

(2) Sample Identification / Collected / (3) Matrix / No. of Containers / (4) Analyses Requested / (5) Remarks/Comments

Sample Identification	Collected Date	Collected Time	Matrix	No. of Containers	38 H-VOC's 8260 (V.C. PCE, TCE, cis 1,2 DCE)	57 METHANE ETHANE ETHENE ACETYLENE	91 TOC	55 SULFATE	Remarks/Comments
BDC-05-16-160126	1-26-16	610	Aq	9	3X	2X	2X	2X	} MISS Fe+2
BDC-05-18-160126	1-26-16	650	Aq	9	X	X	X	X	} MISS Fe+2
BDC-05-21-160126	1-26-16	725	Aq	9	X	X	X	X	} MISS Fe+2
BDC-05-23-160126	1-26-16	755	Aq	7	X		X	X	} MISS Fe+2
BDC-05-22-160126	1-26-16	820	Aq	7	X		X	X	1.4 mg/L Fe+2
BDC-05-20-160126	1-26-16	850	Aq	9	X	X	X	X	1.3 mg/L Fe+2
BDC-05-24-160126	1-26-16	920	Aq	9	X	X	X	X	1.0 mg/L Fe+2
BDC-05-19-160126	1-26-16	945	Aq	9	X	X	X	X	1.3 mg/L Fe+2
BDC-05-12-160126	1-26-16	1015	Aq	9	X	X	X	X	1.1 mg/L Fe+2
BDC-05-02-160126	1-26-16	1045	Aq	9					1.4 mg/L Fe++
BDC-05-DUP-160126	1-26-2016	—	Aq	9	X	X	X	X	
TRIP BLANKS	1-5-2016	—	Aq	4	X	X			

(6) **Turnaround Time Requested** (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour

Date needed: ______

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	1-26-2016 12:30		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

(7)

Relinquished by commercial carrier (circle): UPS FedEx Other: L.L.I. COURIER

Temperature upon Receipt: ______ °C
Custody Seals Intact?: Yes No

BOEING Groundwater Sample Collection Form

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 02-160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ JAN 26, 2016 COC Time: 1045

Well Information

Well I. D.: BDC-05-02 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.35 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.85 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.35 ft - 10.85 ft = 14.5 ft x ~~0.658~~ 2.502 Liters/ft = 36.28 Liters

Purge Rate: 2.8 l. ÷ 16 min. = ~~0.175~~ 2.502 Liters/minute

Begin Purge: 1029 time

End Purge: 1045 time

Volume Purged: 28 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other SWCOV SUMP

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
1029	≈ 250mL	13.1	383	2.11	6.31	-23	
1033	≈ 600	13.5	415	1.25	6.28	-17	
1035	≈ 1.0	13.7	417	0.73	6.32	-19	
1037	≈ 1.3	13.9	420	0.47	6.35	-21	
1039	≈ 1.7	13.8	419	0.42	6.39 ✓	-29	
1041	≈ 2.0	13.8	417	0.31	6.41 ✓	-29	
1043	≈ 2.45	13.6	413	0.23	6.42	-29	
1045	≈ 2.8	13.6	411	0.22	6.40	-28	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(9)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic ~~Glass~~	none	☒ No	Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	S:A Total ~~Metals~~ (post inj. Cu & As) (LLI code 08)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ Yes	S:A ~~Dissolved~~ Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = 1.4 mg/L

Signature: C. W. Hardy Date: JAN 26 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 12 - 160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ JAN 26, 2016 COC Time: 1015

Well Information

Well I. D.: BDC-05-12 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.87 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.24 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.87 ft - 11.24 ft = 13.66 ft x 0.653 Liters/ft = 3.99 Liters

Purge Rate: 2.65 l. + 15 min. = 0.177 Liters/minute

Begin Purge: 1000 time

End Purge: 1015 time

Volume Purged: 2.65 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other sweep or sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
1002	≈ 200	14.9	330	0.50	6.33	-76	
1004	≈ 600	14.7	335	0.27	6.39	-102	
1006	≈ 1.05	15.2	339	0.16	6.47	-117	
1008	≈ 1.4	15.1	342	0.15	6.51	-123	
1010	≈ 1.75	15.2	344 ✓	0.13	6.51	-126	
1012	≈ 2.05	15.0	344 ✓	0.12	6.53 ✓	-128	
1014	≈ 2.4	15.1	344 ✓	0.12	6.52 ✓	-129	
1016	≈ 2.65	15.2	343 ✓	0.11	6.52	-129	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☐ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(9)

Quantity	Size	Type	Preservative	Field Filtered		Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No		VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No		Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No		TOCs (LLI code 91)
2	40 mL	☒ ~~Plastic~~ Glass	none	☒ No		Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	S-A	~~Total Metals~~ (post inj. Cu & As) (LLI code 08)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ Yes	S-A	~~Dissolved~~ Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 1.1 mg/L

Signature: C.N. Hardy Date: ~~JAN~~ 26, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 16 - 160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ JAN 26, 2016 COC Time: 610

Well Information

Well I. D.: BDC-05-16 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.89 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.79 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.89 ft - 10.79 ft = 14.10 ft x 0.658 Liters/ft = 9.28 Liters

Purge Rate: 4.6 l. ÷ 27 min. = 0.170 Liters/minute

Begin Purge: ~~5.53~~ time

End Purge: 610 time

Volume Purged: 4.6 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other Sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel, turb)
545	≈ 100mL	14.7	508	1.36	6.91	-132	
547	≈ 500 mL	15.3	436	1.21	6.63	-123	
549	≈ 800	15.4	413	2.09	6.52	-120	
551	≈ 1.2 L	15.4	400	1.83	6.49	-119	
553	≈ 1.55 L	15.4	401	2.25	6.47	-119	
555	≈ 1.9 L	15.3	403 ✓	2.53	6.45 ✓	-119	
557	≈ 2.25 L	15.3	404 ✓ 397	1.76	6.45 ✓	-119	
559	≈ 2.55	15.4	391 379	1.31	6.44 ✓	-120	
601	≈ 2.9 L	15.6	388	1.02	6.45 ✓	-121	
603	≈ 3.25	15.5	386	0.82	6.48 ✓	-122	
605	≈ 3.6	15.4	377	0.61	6.47 ✓	-122	
607	≈ 4.0	15.6	380 OK	0.51	6.46 ✓	-122	
609	≈ 4.4	15.5	379 ✓	0.42	6.50 ✓	-125	
610	≈ 4.6	15.5	379.	0.41	6.51	-126	

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38)
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ ~~Plastic~~ GLASS	none	☒ No	Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	NNO_3	☐ No	S.A. ~~Total Metals~~ (post inj. Cu & As) (LLI code 08)
~~1~~	250 mL	☐ Plastic	NNO_3	☐ Yes	S.A ~~Dissolved~~ Metals (same as Total) (LLI code 08)

(9)

Comments: * Hach field test Fe++ = _____ mg/L

Signature: C.N. Ward Date: JAN 26 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 18-160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ JAN 26, 2016 COC Time: 650

Well Information

Well I. D.: BDC-05-18 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.69 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.34 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.69 ft - 10.34 ft = 14.35 ft x 0.658 Liters/ft = 9.44 Liters

Purge Rate: 2.2 l. ÷ 14 min. = 0.157 Liters/minute

Begin Purge: 636 time

End Purge: 650 time

Volume Purged: 2.2 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other Sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
638	≈ 100 mL	11.4	148	2.11	6.60	-8.6	
640	≈ 500	11.6	152	1.15	6.39	+7.3	
642	≈ 850	11.9	156	0.89	6.33	+17.9	
644	≈ 1.15 L	12.0	158	1.03	6.32	+21	
646	≈ 1.5	12.4	155	0.99	6.28	+20	
648	≈ 1.9	12.5	151	1.01	6.28	+24	
650	≈ 2.2	12.6	152	1.03	6.30	+27	
652	≈						
654	≈						
655	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ ~~Plastic~~ GLASS	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☐ Plastic	N N O_3	☐ No	S-A ~~Total Metals~~ (post inj. Cu & As) (LLI code 08)
1	250 mL	☐ Plastic	N N O_3	☐ Yes	S-A ~~Dissolved~~ Metals (same as Total) (LLI code 08)

(9)

Comments: * Hach field test Fe++ = _____ mg/L

Signature: C. W. Hardy Date: JAN 26 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

dup

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 19 - 160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ JAN 26, 2016 COC Time: 945

Well Information

Well I. D.: BDC-05-19 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.85 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.11 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.85 ft - 11.11 ft = 13.74 ft x 0.658 Liters/ft = 9.04 Liters

Purge Rate: _____ l. ÷ 14 min. = _____ Liters/minute

Begin Purge: 9:31 time

End Purge: 9:45 time

Volume Purged: _____ Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
933	≈ 100 mL	14.4	303	1.99	6.26	-38	
935	≈ 500	14.8	303	0.34	6.34	-70	
937	≈ 900	14.9	302	0.24	6.39	-82	
939	≈ 1.2	15.0	302	0.22	6.40	-88	
941	≈ 1.55	15.1	300 ✓	0.21	6.41 ✓	-91	
943	≈ 1.9	15.0	298 ✓	0.22	6.43 ✓	-95	
945	≈ 2.25	15.0	296 ✓	0.21	6.41	-95	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

2x **Sample Description:** (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ ~~Plastic~~ Glass	none	☒ No	Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	SA ~~Total Metals~~ (post inj. Cu & As) (LLI code 08)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ Yes	S.P ~~Dissolved~~ Metals (same as Total) (LLI code 08)

(9) 11 18

Comments: Hach field test Fe++ = 1.3 mg/L

Signature: C.W. Hardy Date: JAN. 26 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 20 - 160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ JAN 26, 2016 COC Time: 850

Well Information

Well I. D.: BDC-05-20 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: ✓

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.80 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.08 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.80 ft - 11.08 ft = 13.72 ft x 0.658 Liters/ft = 903 Liters

Purge Rate: 2.4 l. ÷ 15 min. = 0.160 Liters/minute

Begin Purge: 835 time

End Purge: 850 time

Volume Purged: 2.4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other Sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
837	≈ 200	15.0	263	1.05	6.56	-73	
839	≈ 550	15.5	255	0.81	6.61	-90	
841	≈ 900	15.5	253	0.70	6.65	-98	
843	≈ 1.3	15.3	248	0.56	6.65	-103	
845	≈ 1.65	15.1	247 ✓	0.48	6.60 ✓	-103	
847	≈ 2.05	15.4	245	0.45	6.64	-108	
849	2.3	15.2	242	0.34	6.64	-109	
850	≈ 2.4	15.2	242	0.26	6.63	-109	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

(9)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ ~~Plastic~~ G2155	none	☒ No	Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	S.A ~~Total Metals~~ (post inj. Cu & As) (LLI code 08)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ Yes	S.A ~~Dissolved~~ Metals (same as Total) (LLI code 08)

Comments: ~~*~~Hach field test Fe++ = 1.3 mg/L

Signature: C. Hardy Date: JAN 26 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

52nd Sample event

SAMPLE I D: B DC-05- 21-160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ Jan. 26, 2016 COC Time: 725

Well Information

Well I. D.: BDC-05-21 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.86 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.96 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.86 ft - 10.90 ft = 13.9 ft x ~~0~~ 0.658 Liters/ft = 9.10 Liters

Purge Rate: 2.8 l. ÷ 18 min. = ~~0~~ 0.156 Liters/minute

Begin Purge: 707 time

End Purge: 725 time

Volume Purged: 2.8 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other Sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
709	≈ 100	18.1	376	2.19	6.12	-97	
711	≈ 300	19.8	419	1.28	6.48	-106	
713	≈ 800	20.2	441	1.15	6.56	-119	
715	≈ 1200	20.3	436	1.08	6.57	-123	
717	≈ 1500	20.4	435	0.89	6.56	-125	
719	≈ 1.8 L	20.3	434	~~0~~ 0.85	6.55	-125	
721	≈ 2.2 L	20.2	430	~~0~~ 0.70	6.55	-125	
723	≈ 2.5	20.1	426	~~0~~ 0.93	6.51	-120	
725	≈ 2.8	20.1	424	1.41	6.50	-119	
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(9)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ ~~Plastic~~ Glass	none	☒ No	Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	Total Metals (post inj. Cu & As) (LLI code 08)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: ~~X~~ Hach field test Fe++ = _____ mg/L

Signature: C. M. Ward Date: Jan 26 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 22-160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ JAN 26, 2016 COC Time: 820

Well Information

Well I. D.: BDC-05-22 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.07 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.89 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.07 ft - 10.89 ft = 14.18 ft x 0.653 Liters/ft = 9.33 Liters

Purge Rate: _____ l. + 14 min. = _____ Liters/minute

Begin Purge: 806 time

End Purge: 820 time

Volume Purged: _____ Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other Sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
808	≈ 200 mL	14.9	353	1.82	6.38	-74	
810	≈ 600	15.4	363	0.84	6.49	-94	
~~815~~	≈						
814	≈ 1.2	15.3	367	0.48	6.56	-104	
816	≈ 1.6	15.4	369	0.42	6.55	-106	
818	≈ 1.95	15.4	372	0.33	6.56	-108	
820	≈ 2.3	15.5	374	0.28	6.55	-109	
822	≈						
824	≈						
82	≈						
	≈						
	≈						
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
~~2~~	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ ~~Plastic~~ Glass	none	☒ No	Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	Total Metals (post inj. Cu & As) (LLI code 08)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 1.4 mg/L

Signature: C. W. Hardy

Date: JAN 26 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

52nd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 23-160126 (yymmdd)

Collector: Charles Hardy

Date Collected: ~~Feb.~~ Jan. 26, 2016 COC Time: 755

Well Information

Well I. D.: BDC-05-23 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.10 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.40 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.10 ft - 11.40 ft = 13.7 ft x 0.658 Liters/ft = 9.01 Liters

Purge Rate: 2.6 l. ÷ 15 min. = 0.173 Liters/minute

Begin Purge: 740 time

End Purge: 755 time

Volume Purged: 2.6 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other sweeper sump.

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or ©)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
742	≈ 200 mL	13.8	380	1.29	6.39	-68	
744	≈ 550	14.4	399	0.89	6.33	-85	
746	≈ 900	14.6	404	0.85	6.34	-94	
748	≈ 1.3 L	14.6	407	0.80	6.37	-101	
750	≈ 1.7	14.6	408	0.76	6.38	-106	
752	≈ 2.1	14.6	407	0.64	6.42	-109	
754	≈ 2.4	14.6	407	0.56	6.43	-110	
755	≈ 2.6	14.6	407	0.50	6.44	-112	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(7)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☐ Glass	H-Cl	☐ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
~~2~~	40 mL	☐ Glass	H-Cl	☐ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☐ Glass	H_3PO_4	☐ No	TOCs (LLI code 91)
2	40 mL	☐ Plastic	none	☐ No	Sulfate (LLI code 55)
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☐ Plastic	N N O_3	☐ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = mg/L

Signature: [signature]

Date: Jan 26 2016

Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 1st th Quarter 2016 labor alco#1007645

52nd Sample event

SAMPLE I D: B DC-05- 24-160126 (yymmdd)

Collector: Charles Hardy

Date Collected: Feb., 26, 2016 COC Time: _____

JLI

Well Information

Well I. D.: BDC-05-24 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.73 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.31 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.73 ft - 10.81 ft = 13.92 ft x 0.658 Liters/ft = 9.16 Liters

Purge Rate: 2.4 l. ÷ 16 min. = 0.150 Liters/minute

Begin Purge: 9:04 time

End Purge: 920 time

Volume Purged: 2.4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other SWMU 17 SUMP

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel, turb)
906	≈ —	13.5	1.6	14.61	6.63	-34	
908	≈ 250 mL	14.6	160	1.10	6.59	-49	
910	≈ 600	14.7	235	0.41	6.53	-61	
912	≈ 1.0	14.8	232	0.32	6.54	-67	
914	≈ 1.3	14.8	233	0.31	6.55	-70	
916	≈ 1.7	14.8	224	0.34	6.54	-69	DK
918	≈ 2.0	14.9	298?	0.39	6.43	-70	
920	≈ 2.4	14.8	304	0.34	6.47	-76	
	≈						
	≈						
	≈						
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(9)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 5"
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 9
2	40 mL	☒ ~~Plastic~~ GLASS	none	☒ No	Sulfate (LLI code
~~1~~	250 mL	☐ Plastic	N N O_3	☐ No	~~Total~~ Metals (post inj. Cu & As) (LLI co
~~1~~	250 mL	☐ Plastic	N N O_3	☐ Yes	~~Dissolved~~ Metals (same as Total) (LLI c

SA

Comments: Hach field test Fe++ = 1.0 mg/L _____

Signature: C.N. Nuss Date: Feb 26 2016 Continued on Ba

BOTTLE REQUEST FORM

Prepared by: Charles 'Duffy' Hardy
Client: Boeing EHS
Contact: Jim Bet (Boeing) /Clint Jacob (Landau)
Ship To: Charles 'Duffy' Hardy (206-290-6572)
Boeing @ Western Processing Superfund
20015 72nd Ave South
Kent, WA 98032

Project Name: Boeing_DC: SWMU-17 qrt
Sampling Frequency: Quarterly **February** & August.
Sampling Date: ~Jan. 22nd - 23rd, 2016
Need By Date: Jan. 12, 2016
January , July, 2016

# of coolers: As needed
Trip Blanks?: 2 sets, two shipments

Labels?: Provide loose labels
Boxed?: No

No. Of Samples	Analysis Requested	Sample Matrix	Bottle Size	No. Bottles Per Sample	Preservative
11	VOC's EPA 8260 **SHORT LIST***	Water	40-mL VOA	3	HCl
9	Dissolved Gases (methane, ethane, ethene, acetylene) by RSK-175	Water	40-mL VOA	2	HCl
11	Total Organic Carbon	Water	amber 40-mL	2	H_3PO_4
11	Sulfate IC E300	Water	40-mL	2	None
Comments:	*VOC's SHORT analyte LIST = V.C. PCE, TCE, cDCE well list see revised Landau Table 4 SWMU-17 BDC-05-02, -12, -16, -18, -19, -20, -21, -22, -23, & -24 no metals quarterly				

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Sample Container Record

Order Number: 182218
Order Date: 12/18/2015

Standard Frm#: 154723

Client: 13419
The Boeing Company
Boeing_DC:SWMU-17 qrt

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 1

Number of Sample Locations: 9

One complete set of bottles listed below must be filled for each of the 9 sample location(s).

Sample Description	QC Type
BDC-05-02 Water	
BDC-05-12 Water	
BDC-05-16 Water	
BDC-05-18 Water	
BDC-05-19 Water	
BDC-05-20 Water	
BDC-05-21 Water	
BDC-05-24 Water	
DUP Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
3	38	40 ml glass vial (GC/MS)	HCl	VC, PCE, TCE, cDCE	14 days
2	55	40 ml glass vial	None	Sulfate	28 days
2	57	40 ml glass vial	HCl	AMEE by RSK-175	14 days
2	91	40 ml amber vial	H3PO4	Total Organic Carbon	28 days

Group: 2

Number of Sample Locations: 2

One complete set of bottles listed below must be filled for each of the 2 sample location(s).

Sample Description	QC Type
BDC-05-22 Water	
BDC-05-23 Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
3	38	40 ml glass vial (GC/MS)	HCl	VC, PCE, TCE, cDCE	14 days
2	55	40 ml glass vial	None	Sulfate	28 days
2	91	40 ml amber vial	H3PO4	Total Organic Carbon	28 days

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
01/12/2016	01/11/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 182218
Order Date: 12/18/2015

Standard Frm#: 154723

Client: 13419
The Boeing Company
Boeing_DC:SWMU-17 qrt

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 3

Number of Sample Locations: 2

Sample Description	QC Type
Trip Blank Water	Trip Blank

Count	Code	Description	Preservative	Analysis Name	Hold Time
2	38	40 ml glass vial (GC/MS)	HCl	VC, PCE, TCE, cDCE	14 days
2	57	40 ml glass vial	HCl	AMEE by RSK-175	14 days

Sample Acceptance Policy

Samples must be submitted in a manner that meets the criteria listed below. If these criteria are not met, the laboratory will contact the client to discuss how to proceed with testing. If the client decides to proceed with testing, a comment describing the variation will appear on the analytical report.

- Documentation must be complete and include: sample identification, the location, date and time of collection, collector's name or initials, preservation type, sample type, required analyses, and any special remarks concerning the sample.
- Proper sample labeling must include unique identification on a durable (water resistant) label using indelible ink.
- Samples must be collected in appropriate containers with sufficient volume to perform tests. The laboratory will provide appropriate bottleware.
- Samples must be shipped promptly to meet specified holding times with adequate packing materials to prevent damage during shipment and adequate wet ice to meet method temperature requirements (0-6°C, not frozen).

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
01/12/2016	01/11/2016	Lab Drop Off	Per your Request

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

February 05, 2016

Project: Boeing_DC:SWMU-17 qrt

Submittal Date: 01/27/2016
Group Number: 1626626
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
BDC-05-16-160126 Water	8221083
BDC-05-16-160126 Water	8221084
BDC-05-18-160126 Water	8221085
BDC-05-18-160126 Water	8221086
BDC-05-21-160126 Water	8221087
BDC-05-21-160126 Water	8221088
BDC-05-23-160126 Water	8221089
BDC-05-23-160126 Water	8221090
BDC-05-22-160126 Water	8221091
BDC-05-22-160126 Water	8221092
BDC-05-20-160126 Water	8221093
BDC-05-20-160126 Water	8221094
BDC-05-24-160126 Water	8221095
BDC-05-24-160126 Water	8221096
BDC-05-19-160126 Water	8221097
BDC-05-19-160126 Water	8221098
BDC-05-12-160126 Water	8221099
BDC-05-12-160126 Water	8221100
BDC-05-02-160126 Water	8221101
BDC-05-02-160126 Water	8221102
BDC-05-DUP-160126 Water	8221103
BDC-05-DUP-160126 Water	8221104
Trip Blank Water	8221105

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	The Boeing Company	Attn: Lindsey E. Mahrt
ELECTRONIC COPY TO	Landau	Attn: Chris Kimmel

Respectfully Submitted,

Kay Hower
Manager

(510) 672-3979

Project Name: Boeing_DC:SWMU-17 qrt
LL Group #: 1626626

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

RSKSOP-175 modified, GC Miscellaneous

Batch #: 160280014A (Sample number(s): 8221084, 8221086, 8221088, 8221094, 8221096, 8221098, 8221100, 8221102, 8221104 UNSPK: 8221084)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Methane

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Methane

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2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: BDC-05-16-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221083
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 06:10 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD16-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.7**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**23.7**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160294AA	01/30/2016 03:31	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160294AA	01/30/2016 03:31	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 03:31	James S Mathiot	1

Sample Description: BDC-05-16-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221084
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 06:10 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD16H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**8.0**		1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**18,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	200	U	200	200
07105	Ethane	74-84-0	200	U	200	200
07105	Ethene	74-85-1	200	U	200	200
07105	**Methane**	74-82-8	**21,000**		600	200
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 10:46	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 14:39	Johanna C Kennedy	200
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 18:16	Drew M Gerhart	1

Sample Description: BDC-05-18-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221085
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 06:50 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD18-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.3**		0.2	1
11996	**Tetrachloroethene**	127-18-4	**2.2**		0.2	1
11996	**Trichloroethene**	79-01-6	**2.9**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.8**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160294AA	01/30/2016 03:52	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160294AA	01/30/2016 03:52	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 04:11	James S Mathiot	1

Sample Description: BDC-05-18-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221086
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 06:50 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD18H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**170**		3.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**5.4**		0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 11:41	Johanna C Kennedy	1
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 18:48	Drew M Gerhart	1

Sample Description: BDC-05-21-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221087
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 07:25 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD21-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**2.0**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**2.9**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**13.8**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160294AA	01/30/2016 05:33	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160294AA	01/30/2016 05:33	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 04:24	James S Mathiot	1

Sample Description: BDC-05-21-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221088
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 07:25 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD21H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	**Ethene**	74-85-1	**1.2**	**J**	1.0	1
07105	**Methane**	74-82-8	**2,100**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	10	U	10	10
07105	Ethane	74-84-0	10	U	10	10
07105	Ethene	74-85-1	10	U	10	10
07105	**Methane**	74-82-8	**2,500**		30	10
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**1.4**		0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 12:00	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 14:57	Johanna C Kennedy	10
00228	Sulfate	EPA 300.0	1	16027667601B	01/27/2016 22:35	Drew M Gerhart	1

Sample Description: BDC-05-23-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221089
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 07:55 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD23-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**4.9**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.9**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**7.8**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160294AA	01/30/2016 05:54	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160294AA	01/30/2016 05:54	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 04:51	James S Mathiot	1

Sample Description: BDC-05-23-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221090
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 07:55 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD23H

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**2.2**	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 20:24	Drew M Gerhart	1

Sample Description: BDC-05-22-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221091
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 08:20 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD22-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**7.1**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.9**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**6.8**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160294AA	01/30/2016 06:14	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160294AA	01/30/2016 06:14	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 05:05	James S Mathiot	1

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Analysis Report

Sample Description: BDC-05-22-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221092
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 08:20 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD22H

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**8.5**	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 21:28	Drew M Gerhart	1

Sample Description: BDC-05-20-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221093
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 08:50 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD20-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.2**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**2.7**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**9.9**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160322AA	02/01/2016 23:06	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160322AA	02/01/2016 23:06	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 05:18	James S Mathiot	1

Sample Description: BDC-05-20-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221094
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 08:50 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD20H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**1.5**	**J**	1.0	1
07105	**Ethene**	74-85-1	**2.1**	**J**	1.0	1
07105	**Methane**	74-82-8	**9,100**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**11,000**		150	50
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 12:18	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 15:17	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 22:00	Drew M Gerhart	1

Sample Description: BDC-05-24-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221095
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 09:20 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD24-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.4**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.9**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**8.3**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160322AA	02/01/2016 23:27	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160322AA	02/01/2016 23:27	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 05:31	James S Mathiot	1

Sample Description: BDC-05-24-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221096
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 09:20 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD24H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**1.2**	**J**	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**9,300**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**12,000**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**0.43**	**J**	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 12:36	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 15:36	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16027667601B	01/27/2016 23:14	Drew M Gerhart	1

Sample Description: BDC-05-19-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221097
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 09:45 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD19-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.2**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**25.9**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160322AA	02/01/2016 23:47	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160322AA	02/01/2016 23:47	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 05:44	James S Mathiot	1

Sample Description: BDC-05-19-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221098
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 09:45 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD19H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**3.4**	**J**	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**16,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	100	U	100	100
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**18,000**		300	100
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 12:55	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 15:55	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 22:32	Drew M Gerhart	1

Sample Description: BDC-05-12-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221099
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 10:15 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD12-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.8**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**32.7**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160322AA	02/02/2016 00:07	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160322AA	02/02/2016 00:07	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049501B	01/28/2016 05:58	James S Mathiot	1

Sample Description: BDC-05-12-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221100
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 10:15 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD12H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**4.3**	**J**	1.0	1
07105	**Ethene**	74-85-1	**1.3**	**J**	1.0	1
07105	**Methane**	74-82-8	**15,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	100	U	100	100
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**19,000**		300	100
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 13:32	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 16:13	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 23:04	Drew M Gerhart	1

Sample Description: BDC-05-02-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221101
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 10:45 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

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BD02-

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l	ug/l	
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.4**	0.2	1
11996	**Tetrachloroethene**	127-18-4	**4.9**	0.2	1
11996	**Trichloroethene**	79-01-6	**1.7**	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.8**	0.2	1
Wet Chemistry	**SM 5310 C-2000**		mg/l	mg/l	
00273	**Total Organic Carbon**	n.a.	**20.9**	1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160322AA	02/02/2016 00:28	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160322AA	02/02/2016 00:28	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049502A	01/28/2016 06:52	James S Mathiot	1

Sample Description: BDC-05-02-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221102
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 10:45 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD02H

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**5.5**		1.0	1
07105	**Ethene**	74-85-1	**2.1**	**J**	1.0	1
07105	**Methane**	74-82-8	**7,600**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**10,000**		150	50
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	**Sulfate**	14808-79-8	**23.7**		3.0	10

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 13:50	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 16:32	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16027667121B	01/27/2016 23:52	Drew M Gerhart	10

Sample Description: BDC-05-DUP-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221103
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD-D-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.2**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**25.9**		1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160322AA	02/02/2016 00:48	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160322AA	02/02/2016 00:48	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16028049502A	01/28/2016 07:32	James S Mathiot	1

Sample Description: BDC-05-DUP-160126 Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221104
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/26/2016 by CH

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD-DH

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**3.4**	**J**	1.0	1
07105	**Ethene**	74-85-1	**1.1**	**J**	1.0	1
07105	**Methane**	74-82-8	**15,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	100	U	100	100
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**21,000**		300	100
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160280014A	01/28/2016 14:17	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	160280014A	01/28/2016 17:10	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	16027667121B	01/28/2016 00:40	Drew M Gerhart	1

Sample Description: Trip Blank Water
Boeing_DC:SWMU-17 qrt

LL Sample # WW 8221105
LL Group # 1626626
Account # 13419

Project Name: Boeing_DC:SWMU-17 qrt

Collected: 01/05/2016

Submitted: 01/27/2016 10:30
Reported: 02/05/2016 18:31

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

BD-T-

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	5.0	U	5.0	1
07105	Ethane	74-84-0	5.0	U	5.0	1
07105	Ethene	74-85-1	5.0	U	5.0	1
07105	**Methane**	74-82-8	**5.1**		5.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H160322AA	02/01/2016 22:46	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H160322AA	02/01/2016 22:46	Matthew S Krause	1
07105	AMEE by RSK-175	RSKSOP-175 modified	1	160290007A	01/29/2016 10:41	Johanna C Kennedy	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/05/2016 18:31

Group Number: 1626626

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H160294AA	Sample number(s): 8221083,8221085,8221087,8221089,8221091		
cis-1,2-Dichloroethene	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Vinyl Chloride	0.2	U	0.2
Batch number: H160322AA	Sample number(s): 8221093,8221095,8221097,8221099,8221101,8221103,8221105		
cis-1,2-Dichloroethene	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Vinyl Chloride	0.2	U	0.2
Batch number: 160290007A	Sample number(s): 8221105		
Acetylene	5.0	U	5.0
Ethane	5.0	U	5.0
Ethene	5.0	U	5.0
Methane	5.0	U	5.0

Analysis Name	Result		MDL
	ug/l		ug/l
Batch number: 160280014A	Sample number(s): 8221084,8221086,8221088,8221094,8221096,8221098,8221100,8221102,8221104		
Acetylene	1.0	U	1.0
Ethane	1.0	U	1.0
Ethene	1.0	U	1.0
Methane	3.0	U	3.0

Analysis Name	Result		LOQ
	mg/l		mg/l
Batch number: 16028049501B	Sample number(s): 8221083,8221085,8221087,8221089,8221091,8221093,8221095,8221097,8221099		
Total Organic Carbon	1.0	U	1.0
Batch number: 16028049502A	Sample number(s): 8221101,8221103		
Total Organic Carbon	1.0	U	1.0

Analysis Name	Result		MDL
	mg/l		mg/l
Batch number: 16027667121B	Sample number(s): 8221084,8221086,8221090,8221092,8221094,8221098,8221100,8221102,8221104		
Sulfate	0.30	U	0.30
Batch number: 16027667601B	Sample number(s): 8221088,8221096		
Sulfate	0.30	U	0.30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/05/2016 18:31

Group Number: 1626626

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: H160294AA	Sample number(s): 8221083,8221085,8221087,8221089,8221091								
cis-1,2-Dichloroethene	5.00	5.34	5.00	5.09	107	102	80-120	5	30
Tetrachloroethene	5.00	5.24	5.00	5.47	105	109	80-120	4	30
Trichloroethene	5.00	5.40	5.00	5.18	108	104	80-120	4	30
Vinyl Chloride	5.00	5.25	5.00	5.12	105	102	71-123	2	30
Batch number: H160322AA	Sample number(s): 8221093,8221095,8221097,8221099,8221101,8221103,8221105								
cis-1,2-Dichloroethene	5.00	4.80	5.00	4.90	96	98	80-120	2	30
Tetrachloroethene	5.00	5.14	5.00	5.18	103	104	80-120	1	30
Trichloroethene	5.00	4.84	5.00	4.87	97	97	80-120	1	30
Vinyl Chloride	5.00	4.66	5.00	4.71	93	94	71-123	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 160290007A	Sample number(s): 8221105								
Acetylene	51	56.06	51	57.69	110	113	79-126	3	20
Ethane	59.2	59.05	59.2	60.33	100	102	85-115	2	20
Ethene	60.4	61.27	60.4	62.6	101	104	83-115	2	20
Methane	61.3	66	61.3	68.61	108	112	85-115	4	20
	ug/l	ug/l	ug/l	ug/l					
Batch number: 160280014A	Sample number(s): 8221084,8221086,8221088,8221094,8221096,8221098,8221100,8221102,8221104								
Acetylene	51	55.31			108		79-126		
Ethane	59.2	58.28			98		85-115		
Ethene	60.4	59.51			99		83-115		
Methane	61.3	65.31			107		85-115		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16028049501B	Sample number(s): 8221083,8221085,8221087,8221089,8221091,8221093,8221095,8221097,8221099								
Total Organic Carbon	25	25.37			101		91-113		
Batch number: 16028049502A	Sample number(s): 8221101,8221103								
Total Organic Carbon	25	25.35			101		91-113		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16027667121B	Sample number(s): 8221084,8221086,8221090,8221092,8221094,8221098,8221100,8221102,8221104								
Sulfate	7.50	7.31			97		90-110		
Batch number: 16027667601B	Sample number(s): 8221088,8221096								
Sulfate	7.50	7.46			99		90-110		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/05/2016 18:31

Group Number: 1626626

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 160280014A	Sample number(s): 8221084,8221086,8221088,8221094,8221096,8221098,8221100,8221102,8221104 UNSPK: 8221084									
Acetylene	1.0 U	51	52.31	51	53.83	103	106	79-126	3	20
Ethane	8.01	59.2	61.38	59.2	65.98	90	98	74-131	7	30
Ethene	1.0 U	60.4	63.96	60.4	68.19	106	113	72-133	6	30
Methane	17804.31	61.3	11966.92	61.3	16636.71	-9522 (2)	-1904 (2)	73-125	33*	30
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 16028049501B	Sample number(s): 8221083,8221085,8221087,8221089,8221091,8221093,8221095,8221097,8221099 UNSPK: 8221083									
Total Organic Carbon	23.69	10	33.09			94		91-113		
Batch number: 16028049502A	Sample number(s): 8221101,8221103 UNSPK: 8221101									
Total Organic Carbon	20.87	10	30.6			97		91-113		
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 16027667121B	Sample number(s): 8221084,8221086,8221090,8221092,8221094,8221098,8221100,8221102,8221104 UNSPK: 8221086									
Sulfate	5.40	10	15.2			98		90-110		
Batch number: 16027667601B	Sample number(s): 8221088,8221096 UNSPK: P221016									
Sulfate	15.28	50	68.93			107		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	**mg/l**		
Batch number: 16028049501B	Sample number(s): 8221083,8221085,8221087,8221089,8221091,8221093,8221095,8221097,8221099 BKG: 8221083			
Total Organic Carbon	23.69	23.45	1	3
Batch number: 16028049502A	Sample number(s): 8221101,8221103 BKG: 8221101			
Total Organic Carbon	20.87	20.73	1	3
	mg/l	**mg/l**		
Batch number: 16027667121B	Sample number(s): 8221084,8221086,8221090,8221092,8221094,8221098,8221100,8221102,8221104 BKG: 8221086			
Sulfate	5.40	5.36	1	15
Batch number: 16027667601B	Sample number(s): 8221088,8221096 BKG: P221016			
Sulfate	15.28	15.07	1 (1)	15

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/05/2016 18:31

Group Number: 1626626

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C VC, TCE, PCE, cis1,2-DCE
Batch number: H160294AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8221083	103	94	96	94
8221085	104	97	97	93
8221087	100	93	98	92
8221089	100	92	99	92
8221091	104	96	97	95
Blank	101	94	97	94
LCS	104	102	94	97
LCSD	97	91	101	95
Limits:	77-114	74-113	77-110	78-110

Analysis Name: 8260C VC, TCE, PCE, cis1,2-DCE
Batch number: H160322AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8221093	96	89	104	90
8221095	96	88	105	89
8221097	99	91	104	92
8221099	97	90	103	90
8221101	104	100	97	93
8221103	102	94	99	92
8221105	94	92	107	90
Blank	99	92	101	90
LCS	101	94	100	96
LCSD	103	95	100	95
Limits:	77-114	74-113	77-110	78-110

Analysis Name: AMEE by RSK-175
Batch number: 160280014A

	Propene
8221084	93
8221084DL	98
8221086	95
8221088	89
8221088DL	93
8221094	93
8221094DL	99
8221096	90
8221096DL	98
8221098	89
8221098DL	99
8221100	91
8221100DL	101
8221102	88
8221102DL	99
8221104	92
8221104DL	106

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Group Number: 1626626
Reported: 02/05/2016 18:31

	Propene
Blank	104
LCS	99
MS	86
MSD	86
Limits:	44-123

Analysis Name: AMEE by RSK-175
Batch number: 160290007A

	Propene
8221105	99
Blank	102
LCS	99
LCSD	100
Limits:	44-123

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Boeing Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 13419 For Eurofins Lancaster Laboratories use only Group # 1626626 Sample # 8221083-105

Please print. Instructions on reverse side correspond.

(1) Client Information

#13419

Site Location: BOEING

Site Project: DEV. CTR

Site Program/#: SWMU-17 SHORT LIST 52nd EVENT

Boeing PM: JAME BET

Consultant Contact: LANDAU

Report To: LANDAU

Invoice To: [X] Boeing EHS [ ] Other (specify): _____

Sampler: CHARLES HARDY # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: 38 (VOCs 8260; V.C., PCE, TCE, cis 1,2 DCE)	57 (METHANE ETHANE ETHENE ACETYLENE)	91 (TOC)	55 (SULFATE)	(5) Remarks/Comments
BDC-05-16-160126	1-26-16	610	Ag	9	3	2	2	2	} miss Fe+2
BDC-05-18-160126	1-26-16	650	Ag	9	X	X	X	X	
BDC-05-21-160126	1-26-16	725	Ag	9	X	X	X	X	
BDC-05-23-160126	1-26-16	755	Ag	7	X		X	X	
BDC-05-22-160126	1-26-16	820	Ag	7	X		X	X	1.4 mg/L Fe+2
BDC-05-20-160126	1-26-16	850	Ag	9	X	X	X	X	1.3 mg/L Fe+2
BDC-05-24-160126	1-26-16	920	Ag	9	X	X	X	X	1.0 mg/L Fe+2
BDC-05-19-160126	1-26-16	945	Ag	9	X	X	X	X	1.3 mg/L Fe+2
BDC-05-12-160126	1-26-16	1015	Ag	9	X	X	X	X	1.1 mg/L Fe+2
BDC-05-02-160126	1-26-16	1045	Ag	9					1.4 mg/L Fe++
BDC-05-DUP-160126	1-26-2016	—	Ag	9	X	X	X	X	
TRIP BLANKS	1-5-2016	—	Ag	4	X	X			

(6) Turnaround Time Requested (please circle)

(Standard) 5 day 4 day

72 hour 48 hour 24 hour

Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
[signature]	1-26-2016 12:30		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 1-27-16 / 1030

Relinquished by commercial carrier (circle): UPS FedEx Other: L.L.I courier

Temperature upon Receipt: _____ °C

Custody Seals Intact?: (Yes) No

Page 32 of 35

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 134601

Group Number(s): 1626626

Client: Boeing

Delivery and Receipt Information

Delivery Method:	SeaTac	Arrival Timestamp:	01/27/2016 10:30
Number of Packages:	2	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 11:45 on 01/27/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

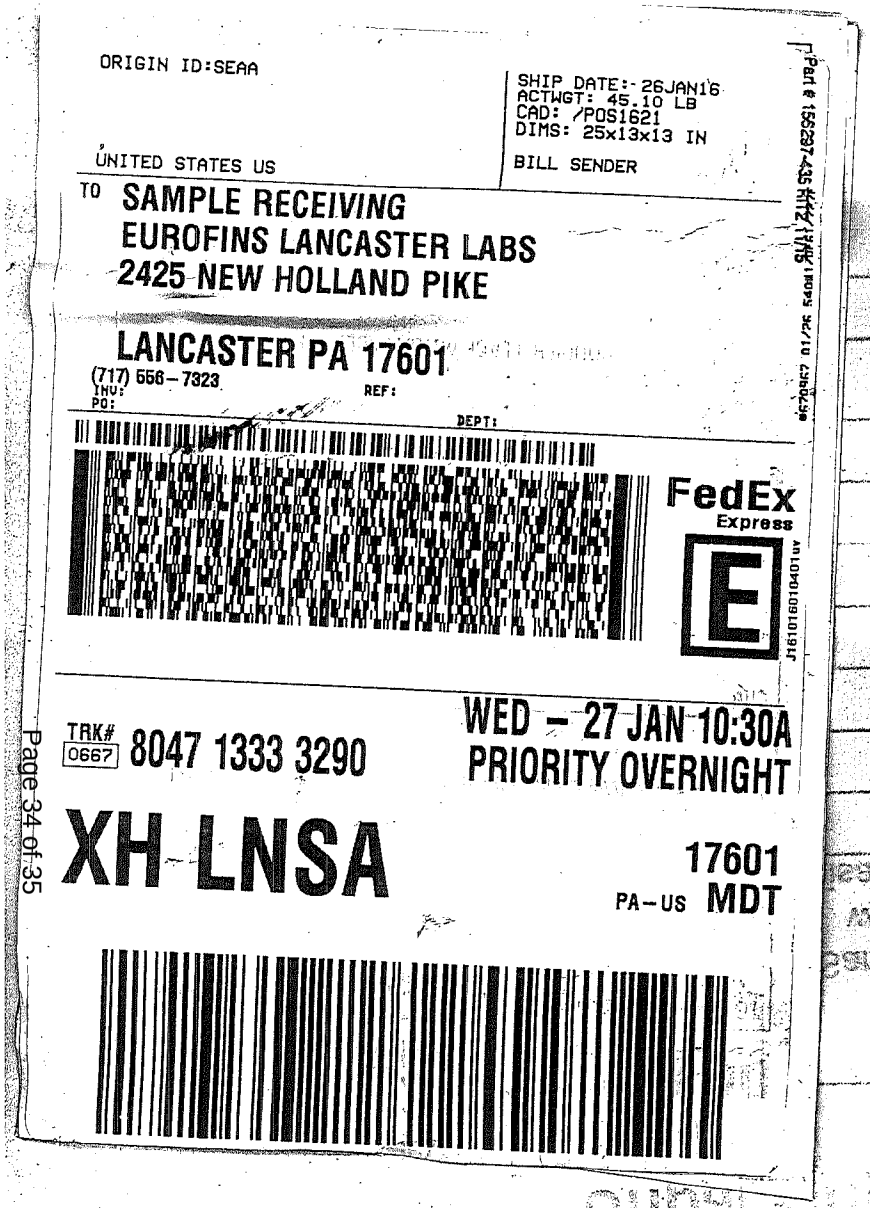
Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	0.2	DT	Wet	Y	Bagged	N
2	DT131	0.4	DT	Wet	Y	Bagged	N

Sample Date/Time Discrepancy Details

Sample ID on COC	Date/Time on Label	Comments
BDC-05-20 Water-160126	1/26/2016 08:55	Time on COC marked at 08:50. Oly 3 vials marked wrong.

General Comments: Missing a cooler.

2425 New Holland Pike
Lancaster, PA 17605-2425
T 717-656-2300
F 717-656-2681
www.LancasterLabs.com



ORIGIN ID:SEAA

SHIP DATE:- 26JAN16
ACTWGT: 45.10 LB
CAD: /POS1621
DIMS: 25x13x13 IN

BILL SENDER

UNITED STATES US

TO SAMPLE RECEIVING
EUROFINS LANCASTER LABS
2425 NEW HOLLAND PIKE

LANCASTER PA 17601
(717) 656-7323
INV:
PO:
REF:
DEPT:

FedEx Express

TRK# 0667 8047 1333 3290

WED - 27 JAN 10:30A
PRIORITY OVERNIGHT

XH LNSA

17601
PA-US MDT

ORIGIN ID:SEAA

SHIP DATE: 26JAN16
ACTWGT: 59.00 LB
CAD: /OFFC1621
DIMS: 29x15x10 IN

BILL SENDER

UNITED STATES US

TO SAMPLE RECEIVING
EUROFINS
2425 NEW HOLLAND PIKE

LANCASTER PA 17601
(717) 656-2300
INV:
PO:
REF:
DEPT:

FedEx Express

TRK# 0667 8047 1333 3280

WED - 27 JAN 10:30A
PRIORITY OVERNIGHT

XH LNSA

17601
PA-US MDT

16260626

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Boeing Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: BOEING TUKWILA, WA
Site Project: DEV. CTR.
Site Program/#: SWMU-17 53rd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: [X] Boeing EHS [ ] Other (specify): _____
Sampler: CHARLES HARDY # of Coolers: 5

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: 38 1-VOCs 8260 PCE TCE DCE V.C.	57 METHANE, ETHANE ETHENE, ACETYLENE	91 TOC	55 SULFATE	08 AS TOTAL METALS CU	08 AS DISSOLVED MTLS CU	LI MATRIX QC TITRATE	(5) Remarks/Comments
												Fe+2
BDC-05-17-160420	4.20.16	500	Aq	11	3X	2X	2X	2X	1X	1X		0.8 mg/L
BDC-05-16-160420	4.20.16	535	Aq	11	X	X	X	X	X	X		1.0 mg/L
BDC-05-18-160420	4.20.16	620	Aq	11	X	X	X	X	X	X		0.8
BDC-05-15-160420	4.20.2016	705	Aq	11	X	X	X	X	X	X		0.6
BDC-05-14-160420	4.20.16	745	Aq	11	X	X	X	X	X	X		2.0
BDC-05-24-160420	4.20.16	840	Aq	11+2	X	X	X	X	X	X	X	1.0
BDC-05-13-160420	4.20.16	920	Aq	11	X	X	X	X	X	X		1.0
BDC-05-19-160420	4.20.16	950	Aq	11	X	X	X	X	X	X		1.2
BDC-05-12-160420	4.20.16	1020	Aq	11	X	X	X	X	X	X		1.1
BDC-05-03-160420	4.20.16	1055	Aq	11	X	X	X	X	X	X		0.6
BDC-05-11-160420	4.20.16	1125	Aq	11	X	X	X	X	X	X		0.8
BDC-05-10-160420	4.20.16	1155	Aq	11	X	X	X	X	X	X		1.1 mg/L
BDC-05-09-160420	4.20.16	1225	Aq	11	X	X	X	X	X	X		3.0
BDC-05-07-160420	4.20.16	1250	Aq	11	X	X	X	X	X	X		2.0 BDC-05-07
BDC-05-02-160420	4.20.16	1315	Aq	11	X	X	X	X	X	X		1.8

(6) Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
[signature] ARR	21 2016 1000		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Relinquished by commercial carrier (circle): UPS FedEx Other: LI COURIER
Temperature upon Receipt: _____ °C
Custody Seals Intact?: Yes No

Boeing Chain of Custody

eurofins | Lancaster Laboratories

For Eurofins Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

(1) #13419 **Client Information**

Site Location: BOEING TUKWILA, WA.
Site Project: DEV. CTR.
Site Program/#: SWMU-17 53rd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: [X] Boeing EHS [ ] Other (specify): _____
Sampler: CHARLES HARDY # of Coolers: 5

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: 38 4-VOCs, 8260 VC, PCE, TCE, DCE	57 METHANE, ETHANE, ETHENE, ACETYLENE	91 TOC	55 SULFATE	08 TOTAL METALS AS CU	08 DISSOLVED METALS AS CU	TOTAL DISSOLVED FE LL	(5) Remarks/Comments
BDC-05-DUP1-160420	4-20-16	~~500~~	Aq	11	X3	X2	X2	X2	X	X		Fe+2
BDC-05-23-160421	4-21-16	~~455~~	Aq	9	X		X	X	X	X		0.6 mg/L @ 05:00
BDC-05-21-160421	4-21-16	535	Aq	11+2	X	X	X	X	X	X	XX	1.0
BDC-05-22-160421	4-21-16	625	Aq	9	X		X	X	X	X		1.0
BDC-05-20-160421	4-21-16	655	Aq	11	X	X	X	X	X	X		0.8
BDC-05-08-160421	4-21-16	730	Aq	9	X		X	X	X	X		1.0
BDC-05-04-160421	4-21-16	800	Aq	9	X		X	X	X	X		0.8
BDC-05-05-160421	4-21-16	830	Aq	9	X		X	X	X	X		0
BDC-05-DUP2-160421	4-21-16	—	Aq	11	X	X	X	X	X	X		
TRIP BLANKS	3-22-16	—	Aq	6	X	X						

(6) **Turnaround Time Requested** (please circle)

Standard	5 day	4 day
72 hour	48 hour	24 hour

Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
C.J. Hardy APRIL	21,2016 1030		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by commercial carrier (circle): UPS FedEx Other: _____		Temperature upon Receipt: _____ °C Custody Seals Intact?: Yes No	

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

53rd Sample event

SAMPLE I D: B DC-05- 02-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April 26, 2016 COC Time: 1315

Well Information

Well I. D. BDC-05-02 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.35 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.77 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.35 ft - 11.77 ft = 13.58 ft x 2.502 Liters/ft = 33.98 Liters

Purge Rate: 3.0 l. ÷ 13 min. = 0.231 Liters/minute

Begin Purge: 1302 time

End Purge: 1315 time

Volume Purged: 3.0 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
1302	≈ 300mL	17.4	411	0.27	6.43	-9.8	
1306	≈ 800	16.9	401 1588	0.15	6.37	-10.4	
1308	≈ 1.3	16.9	396	0.15	6.29	-8.4	
1310	≈ 1.8	16.9	396	0.10	6.26	-8	
1312	≈ 2.3	16.9	395	0.09	6.25	-8.8	
1314	≈ 2.8	16.8	392	0.08	6.26	-10.2	
1315	≈ 3.0	16.7	391	0.09	6.26	-9.8	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(11)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☐ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☐ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☐ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☐ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☐ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☐ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 1.8 mg/L

Signature: C. M. Hardy Date: APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 03 - 160403 25 (yymmdd)

Collector: Charles Hardy

Date Collected: April 28, 2016 COC Time: 1055

Well Information

Well I. D.: BDC-05-03 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: DRY

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 25.47 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.86 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.47 ft - 11.86 ft = 13.61 ft x 0.658 Liters/ft = 9 Liters

Purge Rate: _____ l. + _____ min. = _____ Liters/minute

Begin Purge: 1037 time

End Purge: 1055 time

Volume Purged: _____ Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
1039	≈ 300 mL	16.5	1414	1.14	6.51	-61	
1041	≈ 400	TUBING SEPARATED					
1043	≈ 700	16.5	143 147	1.33	6.29	+15.1	
1045	≈ 1.15	16.5	145	0.87	6.16	+26	
1047	≈ 1.65	16.5	149	0.74	6.10	+31	
1049	≈ 2.1	16.5	154	0.63	6.07	35	
1051	≈ 2.75	16.4	156	0.62	6.00	39	
1053	≈ 3.0	16.5	156	0.57	5.98	37	
1055	≈ 3.4	16.5	155	0.58	5.97	41	OK LEM
1057	≈						
1059	≈						
1100	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

(11)

Comments: Hach field test Fe++ = _____ mg/L

Signature: C. W. Hardy Date: APRIL 28 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 04-160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April 21, 2016 COC Time: 800

Well Information

Well I. D.: BDC-05-04 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.36 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.95 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.36 ft - 11.95 ft = 13.41 ft x 2.502 Liters/ft = 33.55 Liters

Purge Rate: 2.15 l. ÷ 13 min. = 0.165 Liters/minute

Begin Purge: 747 time

End Purge: 800 time

Volume Purged: 2.15 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
749	≈ 150 mL	14.7	251	1.71	6.32	25	
751	≈ 500	14.8	252	0.95	6.21	13.5	
753	≈ 850	14.8	256	0.48	6.14	22.7	
755	≈ 1.25 L	14.8	257	0.36	6.11	27	
757	≈ 1.6	14.8	256	0.35	6.08	31	
759	≈ 2.0	14.8	256	0.27	6.06	34	
800	≈ 2.15	14.8	258	0.25	6.05	35	
803	≈						
805	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(9)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
~~2~~	~~40 mL~~	☒ Glass	H-Cl	☒ No	~~Methane, Ethane, Ethene, Acetylene~~ (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 0.8 mg/L

Signature: C. W. Hardy Date APRIL 21 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

53rd Sample event

SAMPLE I D: B DC-05- 07-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 1250

Well Information

Well I. D.: BDC-05-07 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.30 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.38 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.30 ft - 11.38 ft = 13.92 ft x 2.502 Liters/ft = 34.83 Liters

Purge Rate: 2.75 l. ÷ 12 min. = 0.229 Liters/minute

Begin Purge: 12:38 time

End Purge: 1250 time

Volume Purged: 2.75 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
1240	≈ 250	16.5	319	0.34	6.47	-13	
1242	≈ 750	16.2	321	0.23	6.40	-18	
1244	≈ 1.25	16.2	324	0.17	6.35	-20	
1246	≈ 1.75	16.2	325 ↓	0.13	6.34	-22	
1248	≈ 2.25	16.2	326 ↓	0.13	6.34	-22	
1250	≈ 2.75	16.2	326	0.11	6.35	-23	
1252	≈						
1254	≈						
125	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = 2.0 mg/L

Signature: C. W. Hardy Date: APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

53rd Sample event

SAMPLE I D: B DC-05- 05-160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 21, 2016 COC Time: 830

Well Information

Well I. D.: BDC.05.05 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.18 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.57 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.18 ft - 11.57 ft = 12.61 ft x 2.502 Liters/ft = 31.55 Liters

Purge Rate: 2.65 l. ÷ 14 min. = 0.189 Liters/minute

Begin Purge: 816 time

End Purge: 830 time

Volume Purged: 2.65 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
818	≈ 250 ml	14.3	215	5.09	6.62	1.6	
820	≈ 650	14.2	214	4.52	6.50	6.7	
822	≈ 1.05 L	14.2	214	4.27	6.43	10.6	
824	≈ 1.5	14.3	215 ✓	4.39	6.40	12.4	
826	≈ 1.85	14.3	214 ✓	4.05	6.39	13.2	
828	≈ 2.25	14.3	214 ✓	3.93 ✓	6.38 ✓	13.9	
830	≈ 2.65	14.3	215 ✓	4.00	6.37	14.5	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
~~2~~	~~40 mL~~	☒ Glass	H-Cl	☒ No	~~Methane, Ethane, Ethene, Acetyl~~ene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

(9)

Comments: Hach field test Fe++ = 0 mg/L

Signature: C.W. Hardy Date: April 21, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

53rd Sample event

SAMPLE I D: B DC-05- 08 - 160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April 21, 2016 COC Time: 730

Well Information

Well I. D.: BDC-05-08 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 26.75 (ft.) ☒ historical or ☐ measured)

Present Water Level: 12.11 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 26.75 ft - 12.11 ft = 14.64 ft x 0.658 Liters/ft = 9.63 Liters

Purge Rate: 2.5 l. ÷ 13 min. = 0.192 Liters/minute

Begin Purge: 7:17 time

End Purge: 7:36 time

Volume Purged: _____ Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
7:19	≈ 250mL	15.3	331	0.92	6.60	-19	
721	≈ 700	15.4	327	0.65	6.55	-24	
723	≈ 1.1L	15.4	324	0.59	6.53	-27	
725	≈ 1.5	15.9	314	0.37	6.53 ✓	-32	
727	≈ 1.9	15.9	314	0.28	6.53 ✓	-34	
729	≈ 2.3	15.9	314	0.24	6.53 ✓	-37	
730	≈ 2.5	15.5	314 ✓	0.22	6.53 ✓	-38	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
~~2~~	~~40 mL~~	☒ Glass	~~H-Cl~~	☒ No	~~Methane, Ethane, Ethene, Acetylene~~ (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
~~1~~	~~250 mL~~	☒ Plastic	N N O_3	☒ No	~~Total Metals (post inj. Cu & As)~~ (LLI code 08)
~~1~~	~~250 mL~~	☒ Plastic	N N O_3	☒ Yes	~~Dissolved Metals (same as Total)~~ (LLI code 08)

Comments: * Hach field test Fe++ = _____ mg/L

Signature: C. W. Hardy Date APR 21 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 09-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 1225

Well Information

Well I. D.: BDC-05-09 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: Flooded

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.55 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.80 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.55 ft - 11.80 ft = 12.75 ft x 0.653 Liters/ft = 8.39 Liters

Purge Rate: 3.5 l. + 15 min. = 0.233 Liters/minute

Begin Purge: 1210 time

End Purge: 1225 time

Volume Purged: 3.3 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel, turb)
1212	≈ 300	16.1	211	0.20	6.57	-21	
1214	≈ 750	16.0	211	0.15	6.47	-20	
1216	≈ 1.2	16.0	213	0.17	6.37	-19	
1218	≈ 1.75	16.0	214	0.19	6.34	-22	
1220	≈ 2.2	16.1	215	0.18	6.35	-25	
1222	≈ 2.7	16.0	215	0.18	6.35	-28	
1224	≈ 3.1	15.9	214	0.18	6.35	-29	
1225	≈ 3.3	16.0	214	0.08	6.36	-30	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38)
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 3.0 mg/L

Signature: C W Hardy Date: April 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 10 - 160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20 , 2016 COC Time: 1155

Well Information

Well I. D.: BDC-05-10 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: Flooded

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.57 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.80 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.57 ft - 11.80 ft = 12.77 ft x 0.658 Liters/ft = 8.4 Liters

Purge Rate: 3.3 l. ÷ 12 min. = 0.275 Liters/minute

Begin Purge: 1143 time

End Purge: 1155 time

Volume Purged: 3.3 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
1145	≈ 3.00	15.7	212	0.25	6.46	-7.9	
1147	≈ 1.15	15.7	212	0.19	6.28	-5.1	
1149	≈ 1.7	15.8	211	0.19	6.20	-5.9	
1151	≈ 2.4	16.0	207	0.23	6.18	-10.7	
1153	≈ 2.8	15.9	206	0.22	6.21	-14	
1155	≈ 3.3	16.0	205	0.22	6.22	-17	
1157	≈						
1159	≈						
1200	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = 1.1 mg/L

Signature: C. W. Hardy Date: APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 11-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 1125

Well Information

Well I. D.: BDC-05-11 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: Flood

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.85 (ft.) ☒ historical or ☐ measured)

Present Water Level: 12.02 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.85 ft - 12.02 ft = 12.83 ft x 0.658 Liters/ft = 8.44 Liters

Purge Rate: 3.4 l. ÷ 14 min. = 0.243 Liters/minute

Begin Purge: 11:11 time

End Purge: 11:25 time

Volume Purged: 3.4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
1113	≈ 2.50	16.5	192	0.21	6.49	7.5	
1115	≈ 800	16.4	191	0.16	6.39	2.5	
1117	≈ 1.3	16.4	190	0.11	6.33	-4.1	
1119	≈ 1.95	16.5	190	0.09	6.32	-9.8	
1121	2.4	16.5	190	0.08	6.33	-10.5	
1123	2.95	16.5	190	0.07	6.33	-14.7	
1125	≈ 3.4	16.5	189.8	0.08	6.33	-15.4	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38)
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 0.8 mg/L

Signature: CHARLES HARDY Date: APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

53rd Sample event

SAMPLE I D: B DC-05- 12-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 1020

Well Information

Well I. D.: BDC-05-12 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: (PRV)

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.87 (ft.) ☒ historical or ☐ measured)

Present Water Level: 12.11 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.87 ft - 12.11 ft = 12.76 ft x 0.658 Liters/ft = 8.40 Liters

Purge Rate: 3.3 l. ÷ 16 min. = 0.206 Liters/minute

Begin Purge: 1004 time

End Purge: 1022 time

Volume Purged: 3.3 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel, turb)
1006	≈ 300mL	16.2	278	0.18	6.69	-32	
1008	≈ 750	16.1	271	0.23	6.57	-33	
1010	≈ 1.2	16.1	271	0.24	6.51	-34	
1012	≈ 1.6	16.1	274	0.16	6.46	-34	
1014	≈ 2.1	16.1	278	0.13	6.43	-36	
1016	≈ 2.5	16.	280	0.11	6.43	-39	
1018	≈ 2.9	16.1	282 OK	0.11	6.44	-42	
1020	≈ 3.3	16.1	282	0.10	6.45	-44	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = 1.1 mg/L

Signature: C. N. Hardy Date: APRIL 20, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 13 - 160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April., 20 , 2016 COC Time: 920

Well Information

Well I. D.: BDC-05-13 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 21.78 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.87 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 21.78 ft - 11.87 ft = 12.91 ft x 0.658 Liters/ft = 8.49 Liters

Purge Rate: 2.5 l. + 16 min. = 0.153 Liters/minute

Begin Purge: 9:04 time

End Purge: 920 time

Volume Purged: 2.45 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
906	≈ 200mL	16.0	178	0.73	6.82	-13.5	
908	≈ 600	15.8	164	0.14	6.73	-18	
910	≈ 700	16	—	5.9	6.61	-17	TURBINE SEPARATE
912	≈ 950	15.0	97	0.39	6.63	-21	
914	≈ 1.25	15.7	81	0.37	6.63	-21.6	
916	≈ 1.75	15.8	184	0.17	6.56	-17	
918	≈ 2.1	15.9	185	0.10	6.57	-26	
920	≈ 2.45	15.9	185	0.10	6.60	-36	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 1.0 mg/L

Signature: C. W. Hardy Date: APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 14-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April 20, 2016 COC Time: 745

Well Information

Well I. D.: BDC-05-14 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: Flooded 995 PRESSURE

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.85 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.71 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.85 ft - 11.71 ft = 13.14 ft x 0.658 Liters/ft = 8.65 Liters

Purge Rate: 2.9 l. ÷ 15 min. = 0.193 Liters/minute

Begin Purge: 730 time

End Purge: 745 time

Volume Purged: 2.9 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel, turb)
732	≈ 200 mL	15.9	479	0.38	6.82	-32	
734	≈ 650	15.9	486	0.28	6.79	-42	
736	≈ 1.1	16.0	489	0.23	6.75	-43	
738	≈ 1.5	16.0	489	0.11	6.72	-39	
740	≈ 2.05	16.0	487	0.11	6.71	-42	
742	≈ 2.3	16.0	457?	0.10	6.71	-41	
744	≈ 2.65	16.0	484	0.11	6.71	-46	
745	≈ 2.9	16.0	483	0.11	6.71	-41	
	≈						
	≈						
	≈						
	≈						
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 2.0 mg/L

Signature: C. W. Hardy Date APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 15-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: _____

Well Information

Well I. D.: BDC-05-15 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: (DRY)

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.48 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.49 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.48 ft - 11.49 ft = 12.99 ft x 0.658 Liters/ft = 8.55 Liters

Purge Rate: 2.5 l. ÷ 14 min. = 0.178 Liters/minute

Begin Purge: 651 time

End Purge: 705 time

Volume Purged: 2.5 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
653	≈ 200mL	15.6	447	0.93	6.68	-6.8	
655	≈ 600	15.7	452	0.40	6.75	-27	
657	≈ 950	15.7	453	0.30	6.78	-42	
659	≈ 1.35	15.7	454 ✓	0.26	6.79	-52	
701	≈ 1.75	15.7	456 ✓	0.24	6.79 ✓	-58	
703	≈ 2.2	15.7	455	0.20	6.79 ✓	-63	
705	≈ 2.5	15.8	454	0.13	6.78	-67	
	≈						
	≈						
	≈						
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Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38)
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 0.6 mg/L

Signature: C. W. Ward Date: April 20, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM
Event: 2nd Quarter 2016 labor alco#1007645
SAMPLE I D: B DC-05- 16 - 160520 (yymmdd)
Collector: Charles Hardy
Date Collected: April 20, 2016 COC Time: 5:35

Well Information

Well I. D.: BDC-05-16 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: (DRY)
Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other
Total Depth of Well: 24.89 (ft.) ☒ historical or ☐ measured)
Present Water Level: 11.65 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument
Traditional Purge Volume Calc.: 24.89 ft - 11.65 ft = 13.24 ft x 0.658 Liters/ft = 8.7 Liters
Purge Rate: 2.9 l. ÷ 16 min. = 0.181 Liters/minute

Begin Purge: 5:19 time
End Purge: 5:35 time
Volume Purged: _____ Liters
Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
5:21	≈ 200 mL	15.6	391	1.20	7.03	-66	
5:23	≈ 600	15.6	388	1.20	6.90	-49	
5:25	≈ 1.0 L	15.7	382	1.12	6.85	-39	
5:27	≈ 1.4	15.7	381 ✓	0.94	6.81	-35	
5:29	≈ 1.8	15.7	383 ✓	0.76	6.80 ✓	-34	
5:31	≈ 2.2	15.7	384 ✓	0.66	6.79 ✓	-33	
5:33	≈ 2.5	15.7	379 ✓	0.57	6.78 ✓	-33	
5:35	≈ 2.9	15.7	383 ✓	0.51	6.78 ✓	-33	
	≈						
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	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**
Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other
Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other
Sample Description: (color, turbidity, odor, sheen, etc):

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = 1.0 mg/L
Signature: C. W. Ward Date: APRIL 20, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

53rd Sample event

SAMPLE I D: B DC-05- 17-160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 500

Well Information

Well I. D.: BDC-05-17 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: mow flooded

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.82 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.86 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.82 ft - 11.86 ft = 12.96 ft x 0.658 Liters/ft = 8.53 Liters

Purge Rate: 3.5 l. + 20 min. = 0.175 Liters/minute

Begin Purge: 4:40 time

End Purge: 5:00 time

Volume Purged: 3.5 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel, turb)
4:42	≈ 200mL	16.2	681	0.58	7.25	-93	
4:44	≈ 550	16.0	603	1.11	6.91	-79	
4:46	≈ 950	15.9	589	1.53	6.80	-76	
4:48	≈ 1.	16.0	583	1.51	6.78	-78	
4:50	≈ 1.7	16.0	587 ✓	1.42	6.79	-31	
4:52	≈ 2.0	16.0	587 ✓	0.92	6.81 ✓	-79	
4:54	≈ 2.4	16.0	585 ✓	0.70	6.82 ✓	-79	
4:56	≈ 2.75	16.1	576 ✓	0.59	6.83 ✓	-79	
4:58	≈ 3.15	16.0	576 ✓	0.50	6.84 ✓	-80	
5:00	≈ 3.5	16.0	573 ✓	0.44	6.84 ✓	-77	
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

(11)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 0.8 mg/L

Signature: C. W. Hardy Date: APRIL 20, 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 18 - 160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 620

Well Information

Well I. D.: BDC-05-18 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: (DRY)

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.69 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.22 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.69 ft - 11.22 ft = 13.47 ft x 0.658 Liters/ft = 8.86 Liters

Purge Rate: _____ l. + _____ min. = _____ Liters/minute

Begin Purge: 601 11.22 time

End Purge: _____ time

Volume Purged: _____ Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP (mV)	Other (waterlevel , turb)
603	≈ 150 mL	14.8	150	1.40	6.97	-41	
605	≈	14.7	146	0.41	6.68	-15.1	
607	≈ 500	14.6	148	0.37	6.58	-4.7	
609	≈ 900	14.6	149	0.40	6.54	+0.8	
611	≈ 1.2	14.6	146	0.35	6.51	4.5	
613	≈ 1.6	14.6	143	0.35	6.50	6.7	
615	≈ 1.9	14.6	142	0.30	6.49	8.6	
617	≈ 2.3	14.6	141	0.29	6.50	9.5	
619	≈ 2.6	14.6	142	0.26	6.51	9.4	
620	≈ 2.8	14.6	143	0.26	6.51	10.1	
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 0.8 mg/L

Signature: C. N. Hardy Date: APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 19 - 160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 950

Well Information

Well I. D.: BDC-05-19 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: DRY

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.85 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.99 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.85 ft - 11.99 ft = 12.86 ft x 0.658 Liters/ft = 8.46 Liters

Purge Rate: 3.0 l. ÷ 14 min. = 0.214 Liters/minute

Begin Purge: 936 time

End Purge: 950 time

Volume Purged: 3.0 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
938	300	16.2	330	0.95	6.59	-16	
940	800	16.1	329	0.38	6.52	-24	
942	1.25	16.2	330	0.31	6.48	-29	
944	1.6	16.1	330	0.23	6.45	-33	
946	2.1	16.2	333 ✓	0.18	6.44	-37	
948	2.6	16.1	332	0.15	6.45	-40	
950	3.0	16.2	333	0.14	6.45	-43	

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

(11)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = 1.2 mg/L

Signature: C.W. Hardy Date: APRIL 20 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

53rd Sample event

SAMPLE I D: B DC-05- 20 - 160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 21 , 2016 COC Time: 655

Well Information

Well I. D.: BDC-05-20 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.80 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.92 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.80 ft - 11.92 ft = 12.88 ft x 0.658 Liters/ft = 8.48 Liters

Purge Rate: 2.15 l. + 12 min. = 0.179 Liters/minute

Begin Purge: 643 time

End Purge: 655 time

Volume Purged: 2.15 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
645	≈ 200 mL	16.7	385	1.41	6.62	-24	
647	≈ 650	16.7	399	0.96	6.68	-33	
649	≈ 1.0 L	16.7	401	0.73	6.69	-37	
651	≈ 1.35	16.7	398	0.55	6.67 ✓	-40	
653	≈ 1.75	16.7	398 ✓	0.45	6.64 ✓	-42	
655	≈ 2.15	16.6	397	0.38	6.63 ✓	-44	
657	≈						
659	≈						
7	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 0.8 mg/L

Signature: C.W. Hardy Date: APRIL 21 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

DUP 2

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 21 - 160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 21, 2016 COC Time: 535

Well Information

Well I. D.: BDC-05-21 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 24.86 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.80 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.86 ft - 11.80 ft = _____ ft x 0.658 Liters/ft = _____ Liters

Purge Rate: 2 l. + 15 min. = _____ Liters/minute

Begin Purge: 520 time

End Purge: 535 time

Volume Purged: 2.8 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
522	≈ 200 mL	20.7	455	0.80	6.89	-40	
524	≈ 600	20.3	468	0.53	6.90	-52	
526	≈ 1.0	20.2	471	0.32	6.89	-62	
528	≈ 1.4	20.1	469	0.29	6.87	-67	
530	≈ 1.8	19.9	462	0.24	6.86	-71	
532	≈ 2.2	19.9	456	0.20	6.80	-74	
534	≈ 2.6	19.8	452	0.19	6.78	-75	
535	≈ 2.8	19.7	449	0.18	6.76	-75	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 1.0 mg/L

Signature: C.D. Hardy Date: APRIL 21 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 22 - 160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April 21, 2016 COC Time: 625

Well Information

Well I. D.: BDC-05-22 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.07 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.73 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.07 ft - 11.73 ft = 13.34 ft x 0.658 Liters/ft = 8.78 Liters

Purge Rate: 3.05 l. ÷ 18 min. = 0.169 Liters/minute

Begin Purge: 607 time

End Purge: 625 time

Volume Purged: 3.05 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
609	≈ 150mL	16.4	432	2.50	6.59	-12	
611	≈ 500mL	16.1	434	1.97	6.48	-15	
613	≈ 900	16.1	432	1.84	6.44	-19	
615	≈ 1.3	16.1	430	1.21	6.42	-24	
617	≈ 1.7	16.1	433	1.14	6.42	-28	
619	≈ 2.0	16.1	434	1.01	6.42	-31	
621	≈ 2.35	16.1	434	0.88	6.43	-34	
623	≈ 2.7	16.1	434	0.82	6.44	-36	
625	≈ 3.05	16.1	435	0.79	6.44	-39	
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38).
~~2~~	~~40 mL~~	~~☒ Glass~~	H-Cl	☐ No	~~Methane, Ethane, Ethene, Acetylene~~ (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: Hach field test Fe++ = 1.0 mg/L

Signature: C. N. Hardy Date: APRIL 21 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 23 - 160421 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 21, 2016 COC Time: ~~0455~~ 500

Well Information

Well I. D.: BPC-05-23 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.10 (ft.) ☒ historical or ☐ measured)

Present Water Level: 12.25 (ft.) Measured from: ☑ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.10 ft - 12.71 ft = 12.85 ft x 0.658 Liters/ft = 8.46 Liters

Purge Rate: 4.4 l. + 19 min. = 0.231 Liters/minute

Begin Purge: 436 time

End Purge: 500 ~~4.55~~ time

Volume Purged: 4.4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
438	≈ 200	15.1	704	1.24	7.16	-55	
440	≈ 600	15.2	645	1.57	6.75	-39	
442	≈ 1.0	15.2	601	1.58	6.64	-41	
~~444~~	≈ 1.45	15.2	542	0.95	6.65	-47	
446	≈ 1.8	15.2	532	0.73	6.68 ✓	-54	
448	≈ 2.2	15.2	421 4>3	0.60	6.72 ✓	-59	
~~450~~	≈ 2.6	15.1	415	0.50	6.76*	-63	
452	≈ 3.0	15.1	407 3.94	0.42	6.80*	-66	
454	≈ 3.4	15.1	397 3.85	0.39	6.81 OK	-63	
456	≈ 3.8	15.1	389	0.34	6.83 ✓	-70	
~~458~~	≈ 4.2	15.1	386	0.30	6.83 ~	-72	
~~458~~	≈						
500	≈ 4.4	15.1	385 OK	0.28	6.83 ✓	-72	
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38),
~~2~~	~~40 mL~~	☐ Glass	H-Cl	☒ No	~~Methane, Ethane, Ethene, Acetylene~~ (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = 0.6 mg/L

Signature: C. W. Hardy

Date: APRIL 21 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

DUP 1

53rd Sample event

Project Site: Dev. Ctr. Area: SWMU 17 CWA#7KDVCREM

Event: 2nd Quarter 2016 labor alco#1007645

SAMPLE I D: B DC-05- 24 - 160420 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 20, 2016 COC Time: 840

Well Information

Well I. D.: BDC-05-24 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: Flooded

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 24.73 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.68 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 24.73 ft - 11.68 ft = 13.05 ft x 0.653 Liters/ft = 8.59 Liters

Purge Rate: 3.7 l. ÷ 18 min. = 0.206 Liters/minute

Begin Purge: 822 time

End Purge: 840 time

Volume Purged: 3.7 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP (mV)	Other (waterlevel , turb)
824	≈ 2.50	15.8	286	2.48	6.65	-6.1	
826	≈ 750	15.8	285	1.67	6.50	+2.5	
828	≈	15.8	288	1.19	6.45	4.7	
830	≈ 1.6	15.8	288	0.82	6.43	4.7	
832	≈ 2.0	15.8	288 ✓	0.53	6.42 ✓	3.5	
834	≈ 2.4	15.8	288 ✓	0.44	6.42 ✓	2.4	
836	≈ 2.8	15.8	287 ✓	0.35	6.42 ✓	0.6	
838	≈ 3.25	15.9	288	0.30	6.43	-1.9	
840	≈ 3.7	15.9	288	0.28	6.44	-3.8	
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

DUP1

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
3	40 mL	☒ Glass	H-Cl	☒ No	VOC 8260 PCE, TCE, cis-DCE, & V.C (LLI code38)
2	40 mL	☒ Glass	H-Cl	☒ No	Methane, Ethane, Ethene, Acetylene (LLI code 57)
2	40 mL	☒ Glass	H_3PO_4	☒ No	TOCs (LLI code 91)
2	40 mL	☒ Plastic	none	☒ No	Sulfate (LLI code 55)
1	250 mL	☒ Plastic	N N O_3	☒ No	Total Metals (post inj. Cu & As) (LLI code 08)
1	250 mL	☒ Plastic	N N O_3	☒ Yes	Dissolved Metals (same as Total) (LLI code 08)

Comments: * Hach field test Fe++ = mg/L

Signature: C. N. Hardy Date: APRIL 20 2016 Continued on Back ☐

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185524
Order Date: 03/09/2016

Standard Frm#: 148483

Client: 13419
The Boeing Company
Boeing_DC:SWMU-17 s-ann

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 1

Number of Sample Locations: 3

Sample Description	QC Type
Trip Blank Water	Trip Blank

Count	Code	Description	Preservative	Analysis Name	Hold Time
2	38	40 ml glass vial (GC/MS)	HCl	8260C Water(25ml) Master	14 days

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185524
Order Date: 03/09/2016

Standard Frm#: 148483

Client: 13419
The Boeing Company
Boeing_DC:SWMU-17 s-ann

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 2

Number of Sample Locations: 18

One complete set of bottles listed below must be filled for each of the 18 sample location(s).

Sample Description	QC Type
BDC-05-02 Water	
BDC-05-07 Water	
BDC-05-09 Water	
BDC-05-10 Water	
BDC-05-11 Water	
BDC-05-12 Water	
BDC-05-13 Water	
BDC-05-14 Water	
BDC-05-15 Water	
BDC-05-16 Water	
BDC-05-17 Water	
BDC-05-03 Water	
BDC-05-18 Water	
BDC-05-19 Water	
BDC-05-20 Water	
BDC-05-21 Water	
BDC-05-24 Water	
BDC-05- Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
1	08	250 ml wide mouth plastic	HNO3	Arsenic	6 months
				Copper	6 months
3	38	40 ml glass vial (GC/MS)	HCl	8260C Water(25ml) Master	14 days
2	55	40 ml glass vial	None	Sulfate	28 days
2	57	40 ml glass vial	HCl	AMEE by RSK-175	14 days
2	91	40 ml amber vial	H3PO4	Total Organic Carbon	28 days

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185524
Order Date: 03/09/2016

Standard Frm#: 148483

Client: 13419
The Boeing Company
Boeing_DC:SWMU-17 s-ann

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 3

Number of Sample Locations: 24

One complete set of bottles listed below must be filled for each of the 24 sample location(s).

Sample Description	QC Type
BDC-05-02 Dissolved Water	
BDC-05-07 Dissolved Water	
BDC-05-09 Dissolved Water	
BDC-05-10 Dissolved Water	
BDC-05-11 Dissolved Water	
BDC-05-12 Dissolved Water	
BDC-05-13 Dissolved Water	
BDC-05-14 Dissolved Water	
BDC-05-15 Dissolved Water	
BDC-05-16 Dissolved Water	
BDC-05-17 Dissolved Water	
BDC-05-03 Dissolved Water	
BDC-05-04 Dissolved Water	
BDC-05-05 Dissolved Water	
BDC-05-08 Dissolved Water	
BDC-05-18 Dissolved Water	
BDC-05-19 Dissolved Water	
BDC-05-20 Dissolved Water	
BDC-05-21 Dissolved Water	
BDC-05-22 Dissolved Water	
BDC-05-23 Dissolved Water	
BDC-05-24 Dissolved Water	
BDC-05- Dissolved Water	
BDC-05- Dissolved Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
1	08	250 ml wide mouth plastic	HNO3	Arsenic	6 months
				Copper	6 months

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185524
Order Date: 03/09/2016

Standard Frm#: 148483

Client: 13419
The Boeing Company
Boeing_DC:SWMU-17 s-ann

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Group: 4

Number of Sample Locations: 6

One complete set of bottles listed below must be filled for each of the 6 sample location(s).

Sample Description	QC Type
BDC-05-04 Water	
BDC-05-05 Water	
BDC-05-08 Water	
BDC-05-22 Water	
BDC-05-23 Water	
BDC-05- Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
1	08	250 ml wide mouth plastic	HNO3	Arsenic	6 months
				Copper	6 months
3	38	40 ml glass vial (GC/MS)	HCl	8260C Water(25ml) Master	14 days
2	55	40 ml glass vial	None	Sulfate	28 days
2	91	40 ml amber vial	H3PO4	Total Organic Carbon	28 days

Group: METALS QC

To ensure sufficient sample volume for all method required quality control, please fill the specially marked QC bottle(s) at five of your sample locations requiring Metals analysis.

Count	Description	Preservative
5	500 ml wide mouth plastic	HNO3

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185524
Order Date: 03/09/2016

Standard Frm#: 148483

Client: 13419
The Boeing Company
Boeing_DC:SWMU-17 s-ann

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Do not overfill or rinse out any vials for TOC - Preservative will be lost.

Sample Acceptance Policy

Samples must be submitted in a manner that meets the criteria listed below. If these criteria are not met, the laboratory will contact the client to discuss how to proceed with testing. If the client decides to proceed with testing, a comment describing the variation will appear on the analytical report.

- Documentation must be complete and include: sample identification, the location, date and time of collection, collector's name or initials, preservation type, sample type, required analyses, and any special remarks concerning the sample.
- Proper sample labeling must include unique identification on a durable (water resistant) label using indelible ink.
- Samples must be collected in appropriate containers with sufficient volume to perform tests. The laboratory will provide appropriate bottleware.
- Samples must be shipped promptly to meet specified holding times with adequate packing materials to prevent damage during shipment and adequate wet ice to meet method temperature requirements (0-6°C, not frozen).

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

Report Date: May 05, 2016

Project: Boeing_DC:SWMU-17 s-ann

Submittal Date: 04/22/2016
Group Number: 1653597
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
BDC-05-17-160420 Water	8347287
BDC-05-17-160420 Water	8347288
BDC-05-17-160420 Total Metals Water	8347289
BDC-05-17-160420 Total Metals Water	8347290
BDC-05-17-160420 Dissolved Metals Water	8347291
BDC-05-17-160420 Dissolved Metals Water	8347292
BDC-05-16-160420 Water	8347293
BDC-05-16-160420 Water	8347294
BDC-05-16-160420 Total Metals Water	8347295
BDC-05-16-160420 Total Metals Water	8347296
BDC-05-16-160420 Dissolved Metals Water	8347297
BDC-05-16-160420 Dissolved Metals Water	8347298
BDC-05-18-160420 Water	8347299
BDC-05-18-160420 Water	8347300
BDC-05-18-160420 Total Metals Water	8347301
BDC-05-18-160420 Total Metals Water	8347302
BDC-05-18-160420 Dissolved Metals Water	8347303
BDC-05-18-160420 Dissolved Metals Water	8347304
BDC-05-15-160420 Water	8347305
BDC-05-15-160420 Water	8347306
BDC-05-15-160420 Total Metals Water	8347307
BDC-05-15-160420 Total Metals Water	8347308
BDC-05-15-160420 Dissolved Metals Water	8347309
BDC-05-15-160420 Dissolved Metals Water	8347310
BDC-05-14-160420 Water	8347311
BDC-05-14-160420 Water	8347312
BDC-05-14-160420 Total Metals Water	8347313
BDC-05-14-160420 Total Metals Water	8347314
BDC-05-14-160420 Dissolved Metals Water	8347315
BDC-05-14-160420 Dissolved Metals Water	8347316
BDC-05-24-160420 Water	8347317
BDC-05-24-160420 Water	8347318

BDC-05-24-160420 Total Metals Water	8347319
BDC-05-24-160420 Total Metals Water	8347320
BDC-05-24-160420 Dissolved Metals Water	8347321
BDC-05-24-160420 Dissolved Metals Water	8347322
BDC-05-13-160420 Water	8347323
BDC-05-13-160420 Water	8347324
BDC-05-13-160420 Total Metals Water	8347325
BDC-05-13-160420 Total Metals Water	8347326
BDC-05-13-160420 Dissolved Metals Water	8347327
BDC-05-13-160420 Dissolved Metals Water	8347328
BDC-05-19-160420 Water	8347329
BDC-05-19-160420 Water	8347330
BDC-05-19-160420 Total Metals Water	8347331
BDC-05-19-160420 Total Metals Water	8347332
BDC-05-19-160420 Dissolved Metals Water	8347333
BDC-05-19-160420 Dissolved Metals Water	8347334
BDC-05-12-160420 Water	8347335
BDC-05-12-160420 Water	8347336
BDC-05-12-160420 Total Metals Water	8347337
BDC-05-12-160420 Total Metals Water	8347338
BDC-05-12-160420 Dissolved Metals Water	8347339
BDC-05-12-160420 Dissolved Metals Water	8347340
BDC-05-03-160420 Water	8347341
BDC-05-03-160420 Water	8347342
BDC-05-03-160420 Total Metals Water	8347343
BDC-05-03-160420 Total Metals Water	8347344
BDC-05-03-160420 Dissolved Metals Water	8347345
BDC-05-03-160420 Dissolved Metals Water	8347346
BDC-05-11-160420 Water	8347347
BDC-05-11-160420 Water	8347348
BDC-05-11-160420 Total Metals Water	8347349
BDC-05-11-160420 Total Metals Water	8347350
BDC-05-11-160420 Dissolved Metals Water	8347351
BDC-05-11-160420 Dissolved Metals Water	8347352
BDC-05-10-160420 Water	8347353
BDC-05-10-160420 Water	8347354
BDC-05-10-160420 Total Metals Water	8347355
BDC-05-10-160420 Total Metals Water	8347356
BDC-05-10-160420 Dissolved Metals Water	8347357
BDC-05-10-160420 Dissolved Metals Water	8347358
BDC-05-09-160420 Water	8347359
BDC-05-09-160420 Water	8347360
BDC-05-09-160420 Total Metals Water	8347361
BDC-05-09-160420 Total Metals Water	8347362
BDC-05-09-160420 Dissolved Metals Water	8347363
BDC-05-09-160420 Dissolved Metals Water	8347364
BDC-05-07-160420 Water	8347365
BDC-05-07-160420 Water	8347366
BDC-05-07-160420 Total Metals Water	8347367
BDC-05-07-160420 Total Metals Water	8347368
BDC-05-07-160420 Dissolved Metals Water	8347369
BDC-05-07-160420 Dissolved Metals Water	8347370

BDC-05-02-160420 Water	8347371
BDC-05-02-160420 Water	8347372
BDC-05-02-160420 Total Metals Water	8347373
BDC-05-02-160420 Total Metals Water	8347374
BDC-05-02-160420 Dissolved Metals Water	8347375
BDC-05-02-160420 Dissolved Metals Water	8347376
BDC-05-DUP1-160420 Water	8347377
BDC-05-DUP1-160420 Water	8347378
BDC-05-DUP1-160420 Total Metals Water	8347379
BDC-05-DUP1-160420 Total Metals Water	8347380
BDC-05-DUP1-160420 Dissolved Metals Water	8347381
BDC-05-DUP1-160420 Dissolved Metals Water	8347382
BDC-05-23-160421 Water	8347383
BDC-05-23-160421 Water	8347384
BDC-05-23-160421 Total Metals Water	8347385
BDC-05-23-160421 Total Metals Water	8347386
BDC-05-23-160421 Dissolved Metals Water	8347387
BDC-05-23-160421 Dissolved Metals Water	8347388
BDC-05-21-160421 Water	8347389
BDC-05-21-160421 Water	8347390
BDC-05-21-160421 Total Metals Water	8347391
BDC-05-21-160421 Total Metals Water	8347392
BDC-05-21-160421 Dissolved Metals Water	8347393
BDC-05-21-160421 Dissolved Metals Water	8347394
BDC-05-22-160421 Water	8347395
BDC-05-22-160421 Water	8347396
BDC-05-22-160421 Total Metals Water	8347397
BDC-05-22-160421 Total Metals Water	8347398
BDC-05-22-160421 Dissolved Metals Water	8347399
BDC-05-22-160421 Dissolved Metals Water	8347400
BDC-05-20-160421 Water	8347401
BDC-05-20-160421 Water	8347402
BDC-05-20-160421 Total Metals Water	8347403
BDC-05-20-160421 Total Metals Water	8347404
BDC-05-20-160421 Dissolved Metals Water	8347405
BDC-05-20-160421 Dissolved Metals Water	8347406
BDC-05-08-160421 Water	8347407
BDC-05-08-160421 Water	8347408
BDC-05-08-160421 Total Metals Water	8347409
BDC-05-08-160421 Total Metals Water	8347410
BDC-05-08-160421 Dissolved Metals Water	8347411
BDC-05-08-160421 Dissolved Metals Water	8347412
BDC-05-04-160421 Water	8347413
BDC-05-04-160421 Water	8347414
BDC-05-04-160421 Total Metals Water	8347415
BDC-05-04-160421 Total Metals Water	8347416
BDC-05-04-160421 Dissolved Metals Water	8347417
BDC-05-04-160421 Dissolved Metals Water	8347418
BDC-05-05-160421 Water	8347419
BDC-05-05-160421 Water	8347420
BDC-05-05-160421 Total Metals Water	8347421
BDC-05-05-160421 Total Metals Water	8347422

BDC-05-05-160421 Dissolved Metals Water	8347423
BDC-05-05-160421 Dissolved Metals Water	8347424
BDC-05-DUP2-160421 Water	8347425
BDC-05-DUP2-160421 Water	8347426
BDC-05-DUP2-160421 Total Metals Water	8347427
BDC-05-DUP2-160421 Total Metals Water	8347428
BDC-05-DUP2-160421 Dissolved Metals Water	8347429
BDC-05-DUP2-160421 Dissolved Metals Water	8347430
Trip Blank Water	8347431
Trip Blank Water	8347432

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

Electronic Copy To	The Boeing Company	Attn: Lindsey E. Mahrt
Electronic Copy To	Landau	Attn: Chris Kimmel

Respectfully Submitted,

Kay Hower

Kay Hower
Manager

(510) 672-3979

Project Name: Boeing_DC:SWMU-17 s-ann
LL Group #: 1653597

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

RSKSOP-175 modified, GC Miscellaneous

Batch #: 161170006A (Sample number(s): 8347288, 8347294, 8347300, 8347306, 8347312, 8347318, 8347324, 8347330, 8347336, 8347342, 8347348, 8347354, 8347360, 8347366, 8347372, 8347378, 8347390, 8347402, 8347426, 8347432 UNSPK: 8347288)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Methane

EPA 200.8 rev 5.4, Metals

Batch #: 161177050003A (Sample number(s): 8347319-8347322, 8347325-8347328, 8347427-8347428 UNSPK: 8347319 BKG: 8347319)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161177050004A (Sample number(s): 8347337-8347340, 8347343-8347346, 8347429-8347430 UNSPK: 8347337 BKG: 8347337)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161177050007A (Sample number(s): 8347301-8347304, 8347331-8347334 UNSPK: 8347301 BKG: 8347301)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161207050006A (Sample number(s): 8347391-8347392, 8347397-8347400, 8347403-8347406 UNSPK: 8347391 BKG: 8347391)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161207050007A (Sample number(s): 8347393-8347394, 8347409-8347412, 8347415-8347418 UNSPK: 8347393 BKG: 8347393)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161207050008A (Sample number(s): 8347421-8347424 UNSPK: 8347421 BKG: 8347421)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

EPA 200.8 rev 5.4, Metals Dissolved

Batch #: 161177050003A (Sample number(s): 8347319-8347322, 8347325-8347328, 8347427-8347428 UNSPK: 8347319 BKG: 8347319)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161177050004A (Sample number(s): 8347337-8347340, 8347343-8347346, 8347429-8347430 UNSPK: 8347337 BKG: 8347337)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161177050007A (Sample number(s): 8347301-8347304, 8347331-8347334 UNSPK: 8347301 BKG: 8347301)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161207050006A (Sample number(s): 8347391-8347392, 8347397-8347400, 8347403-8347406 UNSPK: 8347391 BKG: 8347391)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161207050007A (Sample number(s): 8347393-8347394, 8347409-8347412, 8347415-8347418 UNSPK: 8347393 BKG: 8347393)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Batch #: 161207050008A (Sample number(s): 8347421-8347424 UNSPK: 8347421 BKG: 8347421)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Copper

Sample Description: BDC-05-17-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347287
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

05171

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**29.0**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 02:16	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 02:16	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 05:18	James S Mathiot	1

Sample Description: BDC-05-17-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347288
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

05172

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**6.6**		1.0	1
07105	**Ethene**	74-85-1	**1.1**	**J**	1.0	1
07105	**Methane**	74-82-8	**17,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	200	U	200	200
07105	Ethane	74-84-0	200	U	200	200
07105	Ethene	74-85-1	200	U	200	200
07105	**Methane**	74-82-8	**19,000**		600	200
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 12:51	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 14:08	Johanna C Kennedy	200
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 03:08	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-17-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347289
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0029**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:00	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-17-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347290
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0421**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:09	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-17-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347291
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:10	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-17-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347292
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06025	**Arsenic**	7440-38-2	**0.0364**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:12	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-16-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347293
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

05161

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.3**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**17.7**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 02:36	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 02:36	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 05:59	James S Mathiot	1

Sample Description: BDC-05-16-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347294
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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20516

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**9.0**		1.0	1
07105	**Ethene**	74-85-1	**1.4**	**J**	1.0	1
07105	**Methane**	74-82-8	**13,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	100	U	100	100
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**17,000**		300	100
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 20:37	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 14:28	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 03:25	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-16-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347295
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0060**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:17	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-16-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347296
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0423**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:19	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-16-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347297
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:21	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-16-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347298
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06025	**Arsenic**	7440-38-2	**0.0394**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:22	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-18-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347299
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 06:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05181

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**1**		0.2	1
11996	**Tetrachloroethene**	127-18-4	**2.3**		0.2	1
11996	**Trichloroethene**	79-01-6	**3.0**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	Total Organic Carbon	n.a.	1.0	U	1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 02:56	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 02:56	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 06:12	James S Mathiot	1

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Analysis Report

Sample Description: BDC-05-18-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347300
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 06:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05182

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**320**		3.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**8.5**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 20:56	Johanna C Kennedy	1
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 03:42	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-18-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347301
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 06:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 01:56	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-18-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347302
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 06:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0026**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 02:04	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-18-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347303
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 06:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 02:06	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-18-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347304
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 06:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06025	**Arsenic**	7440-38-2	**0.0013 J**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 02:08	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

Sample Description: BDC-05-15-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347305
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:05 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05151

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.1**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**27.6**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 03:17	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 03:17	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 06:26	James S Mathiot	1

Sample Description: BDC-05-15-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347306
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:05 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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20515

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**12**		1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**13,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	200	U	200	200
07105	Ethane	74-84-0	200	U	200	200
07105	Ethene	74-85-1	200	U	200	200
07105	**Methane**	74-82-8	**18,000**		600	200
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 21:15	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 14:47	Johanna C Kennedy	200
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 04:32	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-15-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347307
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:05 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 18:51	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-15-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347308
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:05 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0570**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 18:59	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-15-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347309
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:05 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:01	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-15-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347310
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:05 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06025	**Arsenic**	7440-38-2	**0.0507**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:03	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-14-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347311
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:45 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05141

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.3**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.9**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**22.3**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 03:37	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 03:37	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 06:39	James S Mathiot	1

Sample Description: BDC-05-14-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347312
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:45 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05142

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**1.7**	**J**	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**8,300**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**11,000**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**3.1**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 21:34	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 15:06	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 04:49	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-14-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347313
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:45 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:08	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-14-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347314
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:45 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0157**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:10	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-14-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347315
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:45 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:11	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-14-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347316
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 07:45 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06025	**Arsenic**	7440-38-2	**0.0161**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:14	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-24-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347317
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 08:40 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05241

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.5**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.2**		0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.7**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**4.6**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 03:57	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 03:57	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 06:53	James S Mathiot	1

Sample Description: BDC-05-24-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347318
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 08:40 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05242

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**1.8**	**J**	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**5,200**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**7,500**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**1.3**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 21:52	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 15:26	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 05:05	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-24-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347319
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 08:40 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 17:43	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-24-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347320
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 08:40 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0041**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 17:52	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-24-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347321
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 08:40 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 17:53	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-24-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347322
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 08:40 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0023**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 17:55	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-13-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347323
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05131

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**2.0**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**7.6**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 04:17	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 04:17	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 07:21	James S Mathiot	1

Sample Description: BDC-05-13-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347324
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05132

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**2.0**	**J**	1.0	1
07105	**Ethene**	74-85-1	**1.9**	**J**	1.0	1
07105	**Methane**	74-82-8	**7,800**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**10,000**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 22:11	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 15:45	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 05:22	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-13-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347325
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 18:00	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-13-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347326
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0257**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 18:02	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-13-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347327
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 18:03	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-13-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347328
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0238**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 18:05	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-19-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347329
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

05191

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.6**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**21.3**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 04:38	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 04:38	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 07:34	James S Mathiot	1

Sample Description: BDC-05-19-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347330
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
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05192

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**3.4**	**J**	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**13,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	100	U	100	100
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**19,000**		300	100
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**0.36**	**J**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 22:30	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 16:04	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 05:39	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-19-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347331
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0028**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 02:13	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-19-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347332
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0249**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 02:15	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-19-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347333
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 02:16	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-19-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347334
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 09:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0206**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050007A	05/01/2016 02:18	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050007	04/28/2016 08:03	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-12-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347335
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

05121

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.4**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**14.3**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 04:58	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 04:58	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 07:48	James S Mathiot	1

Sample Description: BDC-05-12-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347336
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05122

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**4.3**	**J**	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**12,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	100	U	100	100
07105	Ethane	74-84-0	100	U	100	100
07105	Ethene	74-85-1	100	U	100	100
07105	**Methane**	74-82-8	**16,000**		300	100
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 22:49	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 16:24	Johanna C Kennedy	100
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 06:29	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-12-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347337
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:07	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-12-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347338
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0158**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:16	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-12-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347339
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:17	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-12-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347340
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:20 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0165**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:19	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-03-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347341
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05031

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**1.2**		0.2	1
11996	**Trichloroethene**	79-01-6	**0.2**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**1.4**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 05:18	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 05:18	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501A	04/28/2016 08:01	James S Mathiot	1

Sample Description: BDC-05-03-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347342
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

05032

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**2,100**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	20	U	20	20
07105	Ethane	74-84-0	20	U	20	20
07105	Ethene	74-85-1	20	U	20	20
07105	**Methane**	74-82-8	**2,800**		60	20
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**6.5**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 23:08	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 17:03	Johanna C Kennedy	20
00228	Sulfate	EPA 300.0	1	16114667603A	04/24/2016 06:46	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-03-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347343
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0033**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:24	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-03-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347344
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0019 J**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:26	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-03-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347345
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:27	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-03-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347346
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 10:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0023**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:29	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-11-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347347
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05111

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.4**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**6.5**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161203AA	04/30/2016 05:39	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161203AA	04/30/2016 05:39	Matthew S Krause	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 08:15	James S Mathiot	1

Sample Description: BDC-05-11-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347348
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05112

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		ug/l		ug/l	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**2.6**	**J**	1.0	1
07105	**Ethene**	74-85-1	**3.3**	**J**	1.0	1
07105	**Methane**	74-82-8	**11,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**13,000**		150	50
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/26/2016 23:26	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 17:22	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 12:21	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-11-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347349
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 09:54	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-11-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347350
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0199**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 10:04	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-11-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347351
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 10:05	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-11-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347352
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0202**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 10:07	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-10-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347353
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05101

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.8**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**5.0**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 11:24	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 11:24	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 08:55	James S Mathiot	1

Sample Description: BDC-05-10-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347354
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05102

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**11**		1.0	1
07105	**Ethene**	74-85-1	**3.9**	**J**	1.0	1
07105	**Methane**	74-82-8	**4,500**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	20	U	20	20
07105	Ethane	74-84-0	20	U	20	20
07105	Ethene	74-85-1	20	U	20	20
07105	**Methane**	74-82-8	**5,800**		60	20
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**0.65**	**J**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 00:04	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 17:42	Johanna C Kennedy	20
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 13:02	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-10-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347355
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 10:13	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-10-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347356
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0153**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 10:14	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-10-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347357
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 10:16	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-10-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347358
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 11:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0156**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050005A	04/28/2016 10:18	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050005	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-09-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347359
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05091

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**2.8**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2.8**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 11:45	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 11:45	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 09:09	James S Mathiot	1

Sample Description: BDC-05-09-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347360
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05092

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**8.4**		1.0	1
07105	**Ethene**	74-85-1	**1.9**	**J**	1.0	1
07105	**Methane**	74-82-8	**5,300**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**6,600**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 00:23	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 18:01	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 13:16	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-09-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347361
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:07	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-09-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347362
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0073**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:18	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

Sample Description: BDC-05-09-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347363
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:23	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-09-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347364
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0088**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:25	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-07-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347365
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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10507

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.2**		0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.5**		0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**3.2**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**3.8**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 12:05	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 12:05	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 09:23	James S Mathiot	1

Sample Description: BDC-05-07-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347366
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05072

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	**Ethene**	74-85-1	**1.3**	**J**	1.0	1
07105	**Methane**	74-82-8	**3,900**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	20	U	20	20
07105	Ethane	74-84-0	20	U	20	20
07105	Ethene	74-85-1	20	U	20	20
07105	**Methane**	74-82-8	**5,400**		60	20
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**2.0**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 00:42	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 18:20	Johanna C Kennedy	20
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 13:30	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-07-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347367
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 11:49	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-07-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347368
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0031**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 11:58	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-07-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347369
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 12:00	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-07-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347370
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 12:50 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0030**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 12:01	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-02-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347371
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 13:15 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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PO Box 3707
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Seattle WA 98124

05021

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.8**	0.2	1
11996	**Tetrachloroethene**	127-18-4	**4.2**	0.2	1
11996	**Trichloroethene**	79-01-6	**1.4**	0.2	1
11996	**Vinyl Chloride**	75-01-4	**0.6**	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**	**mg/l**	
00273	**Total Organic Carbon**	n.a.	**13.6**	1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 12:25	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 12:25	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 09:51	James S Mathiot	1

Sample Description: BDC-05-02-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347372
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 13:15 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05022

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**4.4**	**J**	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**5,600**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**8,800**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**14.5**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 01:01	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 18:40	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 14:11	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-02-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347373
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 13:15 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0083**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 12:07	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-02-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347374
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 13:15 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0049**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 12:09	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-02-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347375
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 13:15 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0036**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 12:10	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-02-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347376
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 13:15 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0022**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050006A	04/28/2016 12:12	Scott P Cuff	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050006	04/27/2016 23:00	Annamaria Kuhns	1

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Analysis Report

Sample Description: BDC-05-DUP1-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347377
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05D11

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.6**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.2**		0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.0**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**4.2**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 12:46	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 12:46	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 10:04	James S Mathiot	1

Sample Description: BDC-05-DUP1-160420 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347378
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05D12

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**2.0**	**J**	1.0	1
07105	**Ethene**	74-85-1	**1.0**	**J**	1.0	1
07105	**Methane**	74-82-8	**5,800**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**7,500**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**0.89**	**J**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 01:20	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 19:03	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 14:25	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-DUP1-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347379
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:24	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-DUP1-160420 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347380
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0043**	0.00040	1

Sample Comments

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050001A	05/01/2016 20:26	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050001	04/28/2016 08:00	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-DUP1-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347381
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:16	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-DUP1-160420 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347382
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/20/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0029**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050002A	05/01/2016 19:17	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050002	04/28/2016 08:06	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-23-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347383
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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10523

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**4.0**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.4**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**6.3**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 13:06	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 13:06	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 10:18	James S Mathiot	1

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Analysis Report

Sample Description: BDC-05-23-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347384
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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20523

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**3.0**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16114667132A	04/24/2016 05:04	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-23-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347385
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:27	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-23-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347386
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0243**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:29	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-23-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347387
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:30	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-23-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347388
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0226**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050008A	05/01/2016 00:32	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050008	04/28/2016 08:09	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-21-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347389
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

10521

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.7**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**2.4**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**12.7**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 13:26	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 13:26	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 10:31	James S Mathiot	1

Sample Description: BDC-05-21-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347390
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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20521

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	**Ethene**	74-85-1	**1.6**	**J**	1.0	1
07105	**Methane**	74-82-8	**3,300**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	20	U	20	20
07105	Ethane	74-84-0	20	U	20	20
07105	Ethene	74-85-1	20	U	20	20
07105	**Methane**	74-82-8	**4,600**		60	20
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**1.1**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 01:39	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 19:22	Johanna C Kennedy	20
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 14:39	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-21-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347391
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 02:43	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-21-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347392
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0156**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 02:51	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-21-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347393
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 03:50	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-21-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347394
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 05:35 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0164**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 03:59	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-22-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347395
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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10522

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**7.3**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Trichloroethene**	79-01-6	**0.9**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**6.0**		1.0	1

Sample Comments

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All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 13:46	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 13:46	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 10:45	James S Mathiot	1

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Analysis Report

Sample Description: BDC-05-22-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347396
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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20522

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**22.4**	0.60	2

Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16114667132A	04/27/2016 02:35	Drew M Gerhart	2

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Analysis Report

Sample Description: BDC-05-22-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347397
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 02:53	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-22-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347398
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0345**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 02:55	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-22-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347399
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 03:00	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-22-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347400
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:25 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0340**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 03:02	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-20-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347401
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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10520

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.3**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**6.8**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**16.2**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 14:07	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 14:07	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049501B	04/28/2016 10:58	James S Mathiot	1

Sample Description: BDC-05-20-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347402
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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20520

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	**Ethane**	74-84-0	**2.5**	**J**	1.0	1
07105	**Ethene**	74-85-1	**6.1**		1.0	1
07105	**Methane**	74-82-8	**6,400**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**8,800**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate	14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 01:57	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 19:41	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 14:52	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-20-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347403
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 03:03	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-20-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347404
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0338**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 03:05	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-20-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347405
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 03:07	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-20-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347406
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 06:55 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0296**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050006A	05/03/2016 03:08	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050006	05/02/2016 06:50	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-08-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347407
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 07:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

05081

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.2**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**1.2**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**3.8**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 14:27	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 14:27	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049502A	04/28/2016 11:54	James S Mathiot	1

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Analysis Report

Sample Description: BDC-05-08-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347408
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 07:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
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Seattle WA 98124

05082

CAT No.	Analysis Name		CAS Number	Result		Method Detection Limit	Dilution Factor
Wet Chemistry		**EPA 300.0**		**mg/l**		**mg/l**	
00228	Sulfate		14808-79-8	0.30	U	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 15:06	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-08-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347409
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 07:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0070**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:00	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-08-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347410
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 07:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0135**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:02	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-08-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347411
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 07:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:07	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-08-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347412
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 07:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0120**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:09	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-04-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347413
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05041

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.4**		0.2	1
11996	**Tetrachloroethene**	127-18-4	**1.0**		0.2	1
11996	**Trichloroethene**	79-01-6	**0.3**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**2.4**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 14:47	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 14:47	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049502A	04/28/2016 12:34	James S Mathiot	1

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Analysis Report

Sample Description: BDC-05-04-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347414
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05042

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**12.2**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16114667132A	04/24/2016 04:24	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-04-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347415
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0042**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:11	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-04-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347416
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0020**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:12	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-04-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347417
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	**Copper**	7440-50-8	**0.0029**	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:14	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-04-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347418
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:00 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06025	**Arsenic**	7440-38-2	**0.0013 J**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050007A	05/03/2016 04:16	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050007	05/02/2016 07:41	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-05-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347419
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05051

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	**Tetrachloroethene**	127-18-4	**0.3**		0.2	1
11996	**Trichloroethene**	79-01-6	**0.6**		0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	Total Organic Carbon	n.a.	1.0	U	1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 15:08	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 15:08	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049502A	04/28/2016 12:48	James S Mathiot	1

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Analysis Report

Sample Description: BDC-05-05-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347420
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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05052

CAT No.	Analysis Name		CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry		**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**		14808-79-8	**13.4**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16114667132A	04/24/2016 04:38	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-05-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347421
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050008A	05/03/2016 01:45	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050008	05/02/2016 07:38	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-05-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347422
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.00081 J**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050008A	05/03/2016 01:53	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050008	05/02/2016 07:38	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-05-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347423
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161207050008A	05/03/2016 01:55	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050008	05/02/2016 07:38	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-05-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347424
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 08:30 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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PO Box 3707
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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06025	Arsenic	7440-38-2	0.00040 U	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161207050008A	05/03/2016 01:57	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161207050008	05/02/2016 07:38	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-DUP2-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347425
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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Seattle WA 98124

05D21

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.7**		0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	**Vinyl Chloride**	75-01-4	**2.4**		0.2	1
Wet Chemistry	**SM 5310 C-2000**		**mg/l**		**mg/l**	
00273	**Total Organic Carbon**	n.a.	**13.3**		1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 15:28	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 15:28	Kerri E Legerlotz	1
00273	Total Organic Carbon	SM 5310 C-2000	1	16119049502A	04/28/2016 13:02	James S Mathiot	1

Sample Description: BDC-05-DUP2-160421 Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347426
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
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Seattle WA 98124

05D22

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	**Ethene**	74-85-1	**1.6**	**J**	1.0	1
07105	**Methane**	74-82-8	**3,000**	**E**	3.0	1
Trial ID: DL						
07105	Acetylene	74-86-2	50	U	50	50
07105	Ethane	74-84-0	50	U	50	50
07105	Ethene	74-85-1	50	U	50	50
07105	**Methane**	74-82-8	**4,400**		150	50
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00228	**Sulfate**	14808-79-8	**1.0**		0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 02:16	Johanna C Kennedy	1
07105	AMEE by RSK-175	RSKSOP-175 modified	2-DL	161170006A	04/26/2016 19:59	Johanna C Kennedy	50
00228	Sulfate	EPA 300.0	1	16114667902A	04/24/2016 15:20	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-05-DUP2-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347427
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 18:07	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-DUP2-160421 Total Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347428
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0173**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050003A	05/01/2016 18:08	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050003	04/28/2016 08:12	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-DUP2-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347429
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		**mg/l**	**mg/l**	
06033	Copper	7440-50-8	0.0020 U	0.0020	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06033	Copper	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:31	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: BDC-05-DUP2-160421 Dissolved Metals Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347430
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 04/21/2016 by CH

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals Dissolved	**EPA 200.8 rev 5.4**		mg/l	mg/l	
06025	**Arsenic**	7440-38-2	**0.0175**	0.00040	1

Sample Comments

State of Washington Lab Certification No. C457
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06025	Arsenic	EPA 200.8 rev 5.4	1	161177050004A	05/01/2016 21:33	Tara L Snyder	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	161177050004	04/27/2016 07:51	James L Mertz	1

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Analysis Report

Sample Description: Trip Blank Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347431
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 03/22/2016

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

DCTB1

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C VC, TCE, PCE, cis1,2-DCE	SW-846 8260C	1	H161251AA	05/04/2016 11:04	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H161251AA	05/04/2016 11:04	Kerri E Legerlotz	1

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Analysis Report

Sample Description: Trip Blank Water
Boeing_DC:SWMU-17 s-ann

LL Sample # WW 8347432
LL Group # 1653597
Account # 13419

Project Name: Boeing_DC:SWMU-17 s-ann

Collected: 03/22/2016

Submitted: 04/22/2016 19:25
Reported: 05/05/2016 12:40

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

DCTB2

CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
GC Miscellaneous	**RSKSOP-175 modified**		**ug/l**		**ug/l**	
07105	Acetylene	74-86-2	1.0	U	1.0	1
07105	Ethane	74-84-0	1.0	U	1.0	1
07105	Ethene	74-85-1	1.0	U	1.0	1
07105	**Methane**	74-82-8	**6.2**		3.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07105	AMEE by RSK-175	RSKSOP-175 modified	1	161170006A	04/27/2016 02:35	Johanna C Kennedy	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: H161203AA	Sample number(s): 8347287,8347293,8347299,8347305,8347311,8347317,8347323,8347329,8347335,8347341,8347347		
cis-1,2-Dichloroethene	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Vinyl Chloride	0.2	U	0.2
Batch number: H161251AA	Sample number(s): 8347353,8347359,8347365,8347371,8347377,8347383,8347389,8347395,8347401,8347407,8347413,8347419,8347425,8347431		
cis-1,2-Dichloroethene	0.2	U	0.2
Tetrachloroethene	0.2	U	0.2
Trichloroethene	0.2	U	0.2
Vinyl Chloride	0.2	U	0.2

Analysis Name	Result		MDL
	ug/l		ug/l
Batch number: 161170006A	Sample number(s): 8347288,8347294,8347300,8347306,8347312,8347318,8347324,8347330,8347336,8347342,8347348,8347354,8347360,8347366,8347372,8347378,8347390,8347402,8347426,8347432		
Acetylene	1.0	U	1.0
Ethane	1.0	U	1.0
Ethene	1.0	U	1.0
Methane	3.0	U	3.0
	mg/l		mg/l
Batch number: 161177050001A	Sample number(s): 8347289-8347292,8347295-8347298,8347379-8347380		
Arsenic	0.00040	U	0.00040
Copper	0.00040	U	0.00040
Batch number: 161177050002A	Sample number(s): 8347307-8347310,8347313-8347316,8347381-8347382		
Arsenic	0.00040	U	0.00040
Copper	0.00040	U	0.00040
Batch number: 161177050003A	Sample number(s): 8347319-8347322,8347325-8347328,8347427-8347428		
Arsenic	0.00040	U	0.00040
Copper	0.00040	U	0.00040
Batch number: 161177050004A	Sample number(s): 8347337-8347340,8347343-8347346,8347429-8347430		
Arsenic	0.00040	U	0.00040
Copper	0.00040	U	0.00040
Batch number: 161177050005A	Sample number(s): 8347349-8347352,8347355-8347358		
Arsenic	0.00040	U	0.00040
Copper	0.00040	U	0.00040

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

Method Blank (continued)

Analysis Name	Result	MDL
	mg/l	mg/l
Batch number: 161177050006A	Sample number(s): 8347367-8347370,8347373-8347376	
Arsenic	0.00040 U	0.00040
Copper	0.00040 U	0.00040
Batch number: 161177050007A	Sample number(s): 8347301-8347304,8347331-8347334	
Arsenic	0.00040 U	0.00040
Copper	0.00040 U	0.00040
Batch number: 161177050008A	Sample number(s): 8347361-8347364,8347385-8347388	
Arsenic	0.00040 U	0.00040
Copper	0.00040 U	0.00040
Batch number: 161207050006A	Sample number(s): 8347391-8347392,8347397-8347400,8347403-8347406	
Arsenic	0.00040 U	0.00040
Copper	0.00040 U	0.00040
Batch number: 161207050007A	Sample number(s): 8347393-8347394,8347409-8347412,8347415-8347418	
Arsenic	0.00040 U	0.00040
Copper	0.00040 U	0.00040
Batch number: 161207050008A	Sample number(s): 8347421-8347424	
Arsenic	0.00040 U	0.00040
Copper	0.00040 U	0.00040

Analysis Name	Result	LOQ
	mg/l	mg/l
Batch number: 16119049501A	Sample number(s): 8347287,8347293,8347299,8347305,8347311,8347317,8347323,8347329,8347335,8347341	
Total Organic Carbon	1.0 U	1.0
Batch number: 16119049501B	Sample number(s): 8347347,8347353,8347359,8347365,8347371,8347377,8347383,8347389,8347395,8347401	
Total Organic Carbon	1.0 U	1.0
Batch number: 16119049502A	Sample number(s): 8347407,8347413,8347419,8347425	
Total Organic Carbon	1.0 U	1.0

Analysis Name	Result	MDL
	mg/l	mg/l
Batch number: 16114667132A	Sample number(s): 8347384,8347396,8347414,8347420	
Sulfate	0.30 U	0.30
Batch number: 16114667603A	Sample number(s): 8347288,8347294,8347300,8347306,8347312,8347318,8347324,8347330,8347336,8347342	
Sulfate	0.30 U	0.30
Batch number: 16114667902A	Sample number(s): 8347348,8347354,8347360,8347366,8347372,8347378,8347390,8347402,8347408,8347426	
Sulfate	0.30 U	0.30

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: H161203AA	Sample number(s): 8347287,8347293,8347299,8347305,8347311,8347317,8347323,8347329,8347335,8347341,8347347								
cis-1,2-Dichloroethene	5.00	4.90	5.00	4.82	98	96	80-120	2	30
Tetrachloroethene	5.00	5.11	5.00	5.08	102	102	80-120	1	30
Trichloroethene	5.00	5.05	5.00	4.98	101	100	80-120	1	30
Vinyl Chloride	5.00	5.36	5.00	5.24	107	105	62-128	2	30
Batch number: H161251AA	Sample number(s): 8347353,8347359,8347365,8347371,8347377,8347383,8347389,8347395,8347401,8347407,8347413,8347419,8347425,8347431								
cis-1,2-Dichloroethene	5.00	5.32	5.00	5.18	106	104	80-120	3	30
Tetrachloroethene	5.00	5.04	5.00	5.21	101	104	80-120	3	30
Trichloroethene	5.00	5.46	5.00	5.24	109	105	80-120	4	30
Vinyl Chloride	5.00	5.26	5.00	5.14	105	103	62-128	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 161170006A	Sample number(s): 8347288,8347294,8347300,8347306,8347312,8347318,8347324,8347330,8347336,8347342,8347348,8347354,8347360,8347366,8347372,8347378,8347390,8347402,8347426,8347432								
Acetylene	51.1	56.42			110		61-148		
Ethane	58.4	58.05			99		85-115		
Ethene	60.8	60.34			99		83-115		
Methane	59.8	64.29			108		85-115		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 161177050001A	Sample number(s): 8347289-8347292,8347295-8347298,8347379-8347380								
Arsenic	0.0100	0.0106			106		85-115		
Copper	0.0500	0.0537			107		85-115		
Batch number: 161177050002A	Sample number(s): 8347307-8347310,8347313-8347316,8347381-8347382								
Arsenic	0.0100	0.0105			105		85-115		
Copper	0.0500	0.0537			107		85-115		
Batch number: 161177050003A	Sample number(s): 8347319-8347322,8347325-8347328,8347427-8347428								
Arsenic	0.0100	0.0102			102		85-115		
Copper	0.0500	0.0516			103		85-115		
Batch number: 161177050004A	Sample number(s): 8347337-8347340,8347343-8347346,8347429-8347430								
Arsenic	0.0100	0.0111			111		85-115		
Copper	0.0500	0.0543			109		85-115		
Batch number: 161177050005A	Sample number(s): 8347349-8347352,8347355-8347358								
Arsenic	0.0100	0.0100			100		85-115		
Copper	0.0500	0.0516			103		85-115		
Batch number: 161177050006A	Sample number(s): 8347367-8347370,8347373-8347376								
Arsenic	0.0100	0.00997			100		85-115		
Copper	0.0500	0.0509			102		85-115		
Batch number: 161177050007A	Sample number(s): 8347301-8347304,8347331-8347334								
Arsenic	0.0100	0.0101			101		85-115		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
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Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

LCS/LCSD (continued)

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/l	mg/l	mg/l	mg/l					
Copper	0.0500	0.0510			102		85-115		
Batch number: 161177050008A	Sample number(s): 8347361-8347364,8347385-8347388								
Arsenic	0.0100	0.0104			104		85-115		
Copper	0.0500	0.0535			107		85-115		
Batch number: 161207050006A	Sample number(s): 8347391-8347392,8347397-8347400,8347403-8347406								
Arsenic	0.0100	0.0112			112		85-115		
Copper	0.0500	0.0545			109		85-115		
Batch number: 161207050007A	Sample number(s): 8347393-8347394,8347409-8347412,8347415-8347418								
Arsenic	0.0100	0.0103			103		85-115		
Copper	0.0500	0.0516			103		85-115		
Batch number: 161207050008A	Sample number(s): 8347421-8347424								
Arsenic	0.0100	0.0111			111		85-115		
Copper	0.0500	0.0507			101		85-115		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16119049501A	Sample number(s): 8347287,8347293,8347299,8347305,8347311,8347317,8347323,8347329,8347335,8347341								
Total Organic Carbon	25	24.16			97		91-113		
Batch number: 16119049501B	Sample number(s): 8347347,8347353,8347359,8347365,8347371,8347377,8347383,8347389,8347395,8347401								
Total Organic Carbon	25	24.16			97		91-113		
Batch number: 16119049502A	Sample number(s): 8347407,8347413,8347419,8347425								
Total Organic Carbon	25	23.73			95		91-113		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16114667132A	Sample number(s): 8347384,8347396,8347414,8347420								
Sulfate	7.50	7.49			100		90-110		
Batch number: 16114667603A	Sample number(s): 8347288,8347294,8347300,8347306,8347312,8347318,8347324,8347330,8347336,8347342								
Sulfate	7.50	7.52			100		90-110		
Batch number: 16114667902A	Sample number(s): 8347348,8347354,8347360,8347366,8347372,8347378,8347390,8347402,8347408,8347426								
Sulfate	7.50	7.60			101		90-110		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l	ug/l					

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
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Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name		Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number:	161170006A	Sample number(s): 8347288,8347294,8347300,8347306,8347312,8347318,8347324,8347330,8347336,8347342,8347348,8347354,8347360,8347366,8347372,8347378,8347390,8347402,8347426,8347432 UNSPK: 8347288									
Acetylene		1.0 U	51.1	55.33	51.1	51.2	108	100	61-148	8	20
Ethane		6.62	58.4	68.83	58.4	63.87	107	98	74-131	7	30
Ethene		1.09	60.8	78.37	60.8	72.21	127	117	72-133	8	30
Methane		16655.16	59.8	16119.71	59.8	14317	-894 (2)	-3909 (2)	73-125	12	30
		mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number:	161177050001A	Sample number(s): 8347289-8347292,8347295-8347298,8347379-8347380 UNSPK: 8347289, P347289									
Arsenic		0.0415	0.0100	0.0530			115 (2)		70-130		
Copper		0.00287	0.0500	0.0553			105		70-130		
Batch number:	161177050002A	Sample number(s): 8347307-8347310,8347313-8347316,8347381-8347382 UNSPK: 8347307, P347307									
Arsenic		0.0579	0.0100	0.0666			88 (2)		70-130		
Copper		0.000885	0.0500	0.0540			106		70-130		
Batch number:	161177050003A	Sample number(s): 8347319-8347322,8347325-8347328,8347427-8347428 UNSPK: 8347319, P347319									
Arsenic		0.00401	0.0100	0.0144			104		70-130		
Copper		0.000643	0.0500	0.0512			101		70-130		
Batch number:	161177050004A	Sample number(s): 8347337-8347340,8347343-8347346,8347429-8347430 UNSPK: 8347337, P347337									
Arsenic		0.0162	0.0100	0.0266			104		70-130		
Copper		0.00119	0.0500	0.0538			105		70-130		
Batch number:	161177050005A	Sample number(s): 8347349-8347352,8347355-8347358 UNSPK: 8347349, P347349									
Arsenic		0.0198	0.0100	0.0294			97		70-130		
Copper		0.00182	0.0500	0.0541			105		70-130		
Batch number:	161177050006A	Sample number(s): 8347367-8347370,8347373-8347376 UNSPK: 8347367, P347367									
Arsenic		0.00273	0.0100	0.0128			101		70-130		
Copper		0.00136	0.0500	0.0506			99		70-130		
Batch number:	161177050007A	Sample number(s): 8347301-8347304,8347331-8347334 UNSPK: 8347301, P347301									
Arsenic		0.00275	0.0100	0.0129			102		70-130		
Copper		0.000481	0.0500	0.0497			98		70-130		
Batch number:	161177050008A	Sample number(s): 8347361-8347364,8347385-8347388 UNSPK: 8347361, P347361									
Arsenic		0.00793	0.0100	0.0185			106		70-130		
Copper		0.000621	0.0500	0.0529			104		70-130		
Batch number:	161207050006A	Sample number(s): 8347391-8347392,8347397-8347400,8347403-8347406 UNSPK: 8347391, P347391									
Arsenic		0.0177	0.0100	0.0292			115		70-130		

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(1) The result for one or both determinations was less than five times the LOQ.
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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Copper	0.000510	0.0500	0.0538			107		70-130		
Batch number: 161207050007A	Sample number(s): 8347393-8347394,8347409-8347412,8347415-8347418 UNSPK: 8347393, P347393									
Arsenic	0.0153	0.0100	0.0272			119		70-130		
Copper	0.00040 U	0.0500	0.0538			108		70-130		
Batch number: 161207050008A	Sample number(s): 8347421-8347424 UNSPK: 8347421, P347421									
Arsenic	0.000920	0.0100	0.0121			112		70-130		
Copper	0.00179	0.0500	0.0538			104		70-130		
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 16119049501A	Sample number(s): 8347287,8347293,8347299,8347305,8347311,8347317,8347323,8347329,8347335,8347341 UNSPK: 8347287									
Total Organic Carbon	29.01	10	38.38			94		91-113		
Batch number: 16119049501B	Sample number(s): 8347347,8347353,8347359,8347365,8347371,8347377,8347383,8347389,8347395,8347401 UNSPK: 8347347									
Total Organic Carbon	6.51	10	16.64			101		91-113		
Batch number: 16119049502A	Sample number(s): 8347407,8347413,8347419,8347425 UNSPK: 8347407									
Total Organic Carbon	3.80	10	13.94			101		91-113		
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 16114667132A	Sample number(s): 8347384,8347396,8347414,8347420 UNSPK: P345760									
Sulfate	189.17	500	696.83			102		90-110		
Batch number: 16114667603A	Sample number(s): 8347288,8347294,8347300,8347306,8347312,8347318,8347324,8347330,8347336,8347342 UNSPK: 8347300									
Sulfate	8.51	10	19.22			107		90-110		
Batch number: 16114667902A	Sample number(s): 8347348,8347354,8347360,8347366,8347372,8347378,8347390,8347402,8347408,8347426 UNSPK: 8347348									
Sulfate	0.30 U	10	10.03			100		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
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Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 161177050001A	Sample number(s): 8347289-8347292,8347295-8347298,8347379-8347380 BKG: 8347289, P347289			
Arsenic	0.0415	0.0430	4	20
Copper	0.00287	0.00304	6 (1)	20
Batch number: 161177050002A	Sample number(s): 8347307-8347310,8347313-8347316,8347381-8347382 BKG: 8347307, P347307			
Arsenic	0.0579	0.0573	1	20
Copper	0.000885	0.000921	4 (1)	20
Batch number: 161177050003A	Sample number(s): 8347319-8347322,8347325-8347328,8347427-8347428 BKG: 8347319, P347319			
Arsenic	0.00401	0.00399	0 (1)	20
Copper	0.000643	0.00040 U	200* (1)	20
Batch number: 161177050004A	Sample number(s): 8347337-8347340,8347343-8347346,8347429-8347430 BKG: 8347337, P347337			
Arsenic	0.0162	0.0160	1	20
Copper	0.00119	0.000902	27* (1)	20
Batch number: 161177050005A	Sample number(s): 8347349-8347352,8347355-8347358 BKG: 8347349, P347349			
Arsenic	0.0198	0.0205	4	20
Copper	0.00182	0.00156	16 (1)	20
Batch number: 161177050006A	Sample number(s): 8347367-8347370,8347373-8347376 BKG: 8347367, P347367			
Arsenic	0.00273	0.00303	11 (1)	20
Copper	0.00136	0.00122	10 (1)	20
Batch number: 161177050007A	Sample number(s): 8347301-8347304,8347331-8347334 BKG: 8347301, P347301			
Arsenic	0.00275	0.00276	0 (1)	20
Copper	0.000481	0.00040 U	200* (1)	20
Batch number: 161177050008A	Sample number(s): 8347361-8347364,8347385-8347388 BKG: 8347361, P347361			
Arsenic	0.00793	0.00747	6 (1)	20
Copper	0.000621	0.000561	10 (1)	20
Batch number: 161207050006A	Sample number(s): 8347391-8347392,8347397-8347400,8347403-8347406 BKG: 8347391, P347391			
Arsenic	0.0177	0.0184	4	20
Copper	0.000510	0.00040 U	200* (1)	20
Batch number: 161207050007A	Sample number(s): 8347393-8347394,8347409-8347412,8347415-8347418 BKG: 8347393, P347393			
Arsenic	0.0153	0.0166	8	20
Copper	0.00040 U	0.000504	200* (1)	20
Batch number: 161207050008A	Sample number(s): 8347421-8347424 BKG: 8347421, P347421			
Arsenic	0.000920	0.000904	2 (1)	20
Copper	0.00179	0.00256	35* (1)	20
	mg/l	mg/l		

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Quality Control Summary

Client Name: The Boeing Company
Reported: 05/05/2016 12:40

Group Number: 1653597

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Batch number: 16119049501A	Sample number(s): 8347287,8347293,8347299,8347305,8347311,8347317,8347323,8347329,8347335,8347341 BKG: 8347287			
Total Organic Carbon	29.01	29.01	0	3
Batch number: 16119049501B	Sample number(s): 8347347,8347353,8347359,8347365,8347371,8347377,8347383,8347389,8347395,8347401 BKG: 8347347			
Total Organic Carbon	6.51	6.49	0	3
Batch number: 16119049502A	Sample number(s): 8347407,8347413,8347419,8347425 BKG: 8347407			
Total Organic Carbon	3.80	3.75	1 (1)	3
	mg/l	mg/l		
Batch number: 16114667132A	Sample number(s): 8347384,8347396,8347414,8347420 BKG: P345760			
Sulfate	189.17	197.73	4 (1)	15
Batch number: 16114667603A	Sample number(s): 8347288,8347294,8347300,8347306,8347312,8347318,8347324,8347330,8347336,8347342 BKG: 8347300			
Sulfate	8.51	8.43	1	15
Batch number: 16114667902A	Sample number(s): 8347348,8347354,8347360,8347366,8347372,8347378,8347390,8347402,8347408,8347426 BKG: 8347348			
Sulfate	0.30 U	0.30 U	0 (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C VC, TCE, PCE, cis1,2-DCE
Batch number: H161203AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8347287	98	102	99	94
8347293	101	102	101	95
8347299	98	99	101	93
8347305	98	101	100	92
8347311	104	105	97	93
8347317	103	103	98	93
8347323	101	102	97	95
8347329	103	100	97	92
8347335	101	103	98	93
8347341	99	98	99	92
8347347	99	100	100	90
Blank	106	103	97	93
LCS	109	103	95	95

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Quality Control Summary

Client Name: The Boeing Company
Group Number: 1653597
Reported: 05/05/2016 12:40

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
LCSD	107	101	96	96
Limits:	77-114	74-113	77-110	78-110

Analysis Name: 8260C VC, TCE, PCE, cis1,2-DCE
Batch number: H161251AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8347353	102	96	102	93
8347359	101	98	101	91
8347365	101	97	103	92
8347371	102	100	103	95
8347377	110	104	96	94
8347383	110	108	95	95
8347389	105	97	100	93
8347395	105	101	99	93
8347401	105	100	99	92
8347407	104	98	101	93
8347413	102	99	102	92
8347419	101	97	101	91
8347425	101	95	104	92
8347431	101	103	104	94
Blank	104	99	99	93
LCS	110	103	94	95
LCSD	104	97	99	97
Limits:	77-114	74-113	77-110	78-110

Analysis Name: AMEE by RSK-175
Batch number: 161170006A

	Propene
8347288	80
8347288DL	94
8347294	90
8347294DL	96
8347300	96
8347306	89
8347306DL	96
8347312	87
8347312DL	108
8347318	89
8347318DL	111
8347324	99
8347324DL	108
8347330	81
8347330DL	99
8347336	86
8347336DL	93
8347342	85
8347342DL	101

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company Group Number: 1653597
Reported: 05/05/2016 12:40

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

	Propene
8347348	92
8347348DL	98
8347354	90
8347354DL	99
8347360	89
8347360DL	97
8347366	89
8347366DL	103
8347372	85
8347372DL	96
8347378	88
8347378DL	99
8347390	91
8347390DL	101
8347402	87
8347402DL	94
8347426	86
8347426DL	97
8347432	93
Blank	99
LCS	101
MS	84
MSD	76
Limits:	44-123

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Boeing Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 13419 For Eurofins Lancaster Laboratories use only Group # 1653597 Sample # 8347287-32 PAGE 1 of 2

Please print. Instructions on reverse side correspond.

① Client Information

#13419

Site Location: BOEING TUKWILA, WA

Site Project: DEV. CTR.

Site Program/#: SWMU-17 53rd EVENT

Boeing PM: JAMES BET

Consultant Contact: LANDAU

Report To: LANDAU

Invoice To: ☒ Boeing EHS ☐ Other (specify):

Sampler: CHARLES HARDY # of Coolers: 5

④ Analyses Requested / ⑤ Remarks/Comments

② Sample Identification	Collected Date	Collected Time	③ Matrix	No. of Containers	38 H-VOCs 8260 V.C. PCE TCE DCE	57 METHANE, ETHANE ETHENE, ACETYLENE	91 TOC	55 SULFATE	08 TOTAL METALS AS CU	08 DISSOLVED MTLS AS CU	LLI BATCH QC Tot/Dis	Remarks/Comments Fe+2
BDC-05-17-160420	4-20-16	500	Aq	11	3X	2X	2X	2X	1X	1X		0.8 mg/L
BDC-05-16-160420	4-20-16	535	Aq	11	X	X	X	X	X	X		1.0 mg/L
BDC-05-18-160420	4-20-16	620	Aq	11	X	X	X	X	X	X		0.8
BDC-05-15-160420	4-20-2016	705	Aq	11	X	X	X	X	X	X		0.6
BDC-05-14-160420	4-20-16	745	Aq	11	X	X	X	X	X	X		2.0
BDC-05-24-160420	4-20-16	840	Aq	11+2	X	X	X	X	X	X	X	1.0
BDC-05-13-160420	4-20-16	920	Aq	11	X	X	X	X	X	X		1.0
BDC-05-19-160420	4-20-16	950	Aq	11	X	X	X	X	X	X		1.2
BDC-05-12-160420	4-20-16	1020	Aq	11	X	X	X	X	X	X		1.1
BDC-05-03-160420	4-20-16	1055	Aq	11	X	X	X	X	X	X		0.6
BDC-05-11-160420	4-20-16	1125	Aq	11	X	X	X	X	X	X		0.8
BDC-05-10-160420	4-20-16	1155	Aq	11	X	X	X	X	X	X		1.1 mg/L
BDC-05-09-160420	4-20-16	1225	Aq	11	X	X	X	X	X	X		3.0
BDC-05-07-160420	4-20-16	1250	Aq	11	X	X	X	X	X	X		2.0 BDC-05-07
BDC-05-02-160420	4-20-16	1315	Aq	11	X	X	X	X	X	X		1.8

⑥ Turnaround Time Requested (please circle)

(Standard) 5 day 4 day

72 hour 48 hour 24 hour

Date needed: ______

⑦

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	APRIL 21, 2016 1030		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 4/22/16 1925

Relinquished by commercial carrier (circle): UPS FedEx Other: L.L.I COURIER

Temperature upon Receipt: 0.7-4.7 °C

Custody Seals Intact?: (Yes) No

Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300

The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client.

Issued by Dept. 40 Management 7063.02

Boeing Chain of Custody

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Acct. # 13419 For Eurofins Lancaster Laboratories use only Group # 1653597 Sample # 347287-32

Please print. Instructions on reverse side correspond.

(1) #13419 **Client Information**

Site Location: BOEING TUKWILA, WA.
Site Project: DEV. CTR.
Site Program/#: SWMU-17 53rd EVSMP
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: CHARLES HARDY # of Coolers: 5

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: 38 VC, PCE, TCE, DCE 4-VOCs, 8260	57 Methane, Ethane, Ethene, Acetylene	91 TOC	55 Sulfate	08 Total Metals as CO	08 Dissolved Metals as CO	Total & Dissolved Fe	(5) Remarks/Comments
BDC-05-DUP1-160420	4-20-16		Aq	11	X3	X2	X2	X2	X	X		Fe+2
BDC-05-23-160421	4-21-16	~~500~~ 455	Aq	9	X		X	X	X	X		0.6 mg/L time 05:00
BDC-05-21-160421	4-21-16	535	Aq	11+2	X	X	X	X	X	X	XX	1.0
BDC-05-22-160421	4-21-16	625	Aq	9	X		X	X	X	X		1.0
BDC-05-20-160421	4-21-16	655	Aq	11	X	X	X	X	X	X		0.8
BDC-05-08-160421	4-21-16	730	Aq	9	X		X	X	X	X		1.0
BDC-05-04-160421	4-21-16	800	Aq	9	X		X	X	X	X		0.8
BDC-05-05-160421	4-21-16	830	Aq	9	X		X	X	X	X		0
BDC-05-DUP2-160421	4-21-16	—	Aq	11	X	X	X	X	X	X		
TRIP BLANK	3-22-16	—	Aq	6	X	X						

(6) **Turnaround Time Requested** (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour
Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
[signature] APRIL	21,296 1000		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 4/22/16 1925

Relinquished by commercial carrier (circle): UPS FedEx Other: _____

Temperature upon Receipt: 0.7-4.7 °C

Custody Seals Intact?: Yes No

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Sample Administration Receipt Documentation Log

Doc Log ID: 144030

Group Number(s): 1653597

Client: Boeing

Delivery and Receipt Information

Delivery Method:	SeaTac	Arrival Timestamp:	04/22/2016 19:25
Number of Packages:	5	Number of Projects:	1
State/Province of Origin:	WA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	6
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Patrick Engle (3472) at 21:54 on 04/22/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

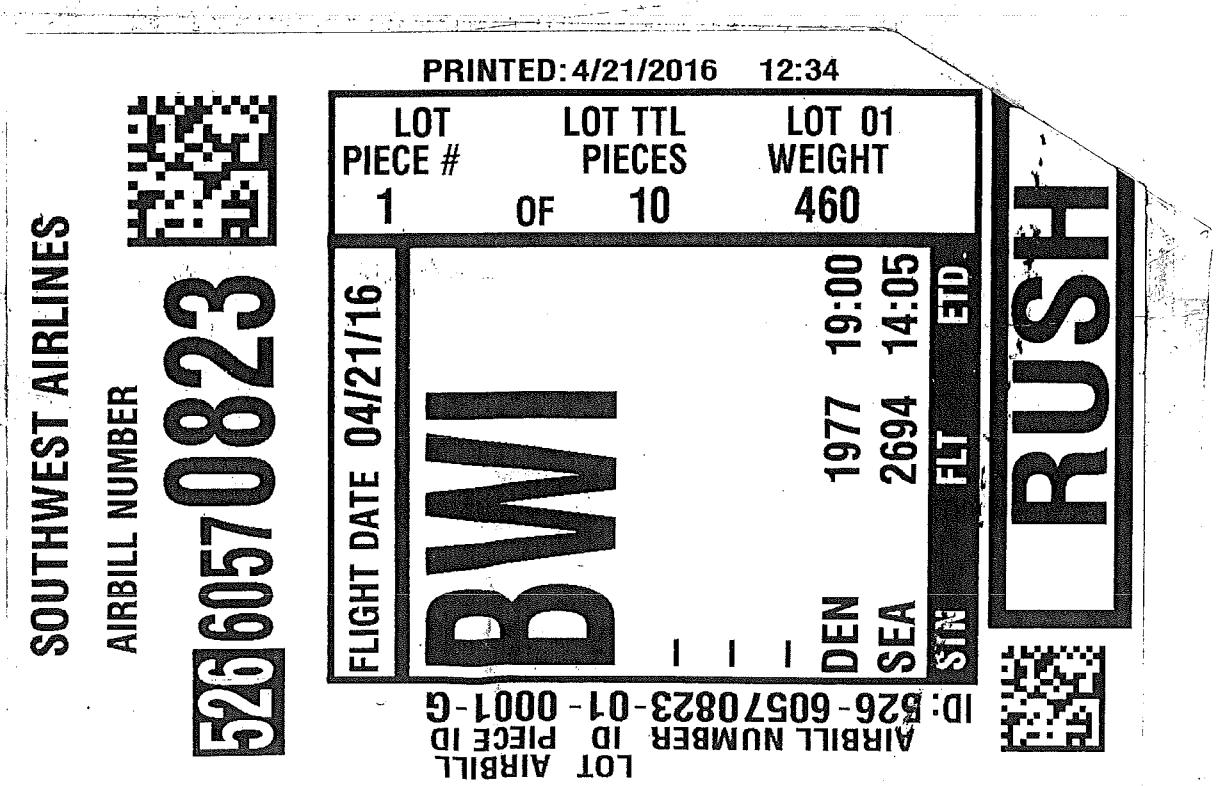
Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	4.7	DT	Wet	Y	Bagged	N
2	DT121	0.7	DT	Wet	Y	Bagged	N
3	DT121	0.7	DT	Wet	Y	Bagged	N
4	DT121	0.7	DT	Wet	Y	Bagged	N
5	DT121	3.7	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

G# 1653597


PRINTED: 4/21/2016 12:34
SOUTHWEST AIRLINES
AIRBILL NUMBER
526 6057 0823
LOT PIECE # 2 OF
LOT TTL PIECES 10
LOT 01 WEIGHT 460
FLIGHT DATE 04/21/16
BWI
DEN 1977 19:00
SEA 2694 14:05
STN FLT ETD
RUSH
LOT AIRBILL ID PIECE ID
AIRBILL NUMBER ID: 526-60570823-01-0002-G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AIRBILL NUMBER
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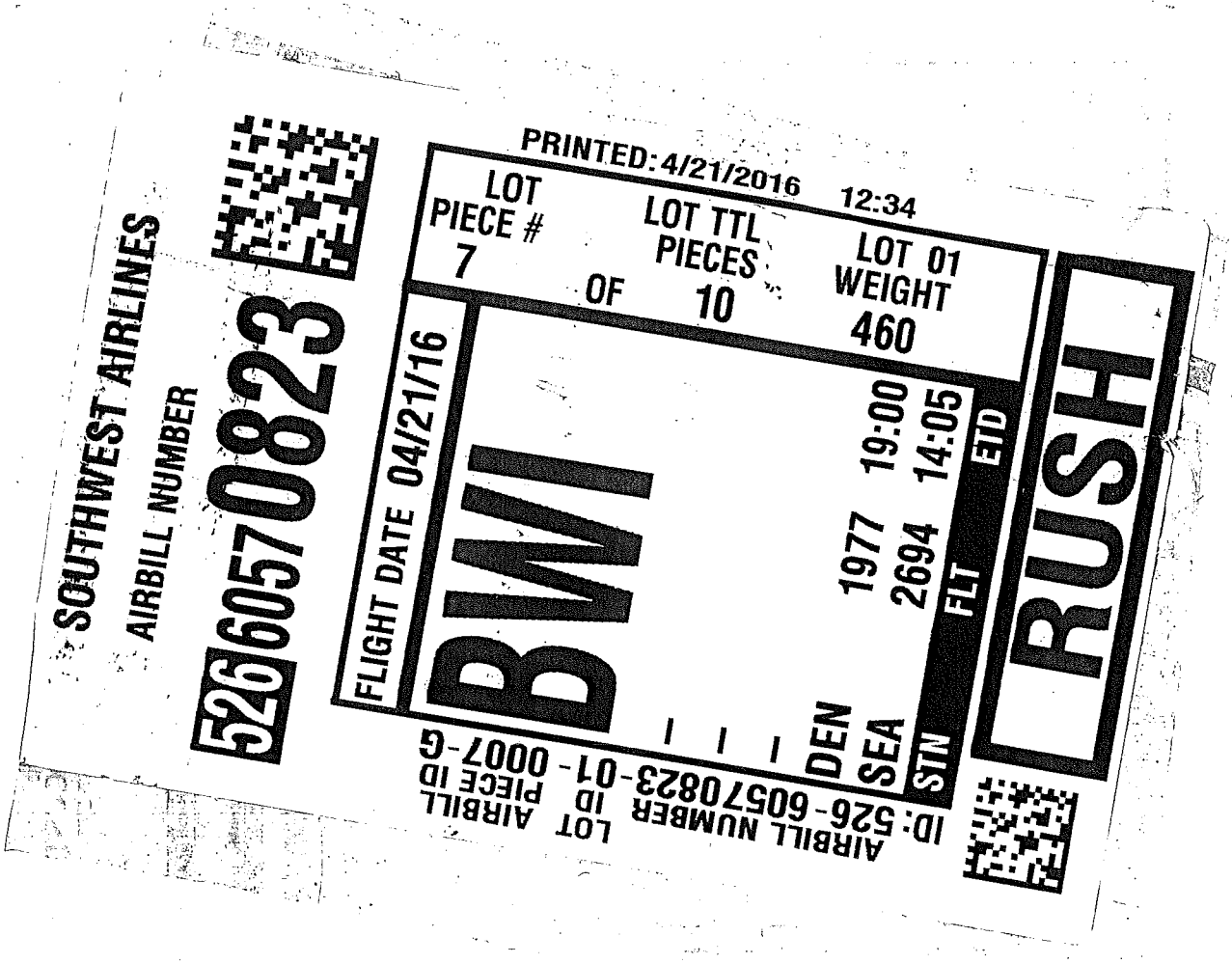
LOT PIECE # 1 OF
LOT TTL PIECES 10
LOT 01 WEIGHT 460
FLIGHT DATE 04/21/16
BWI
DEN 1977 19:00
SEA 2694 14:05
STN FLT ETD
RUSH
LOT AIRBILL ID PIECE ID
AIRBILL NUMBER ID: 526-60570823-01-0001-G

G# 1653597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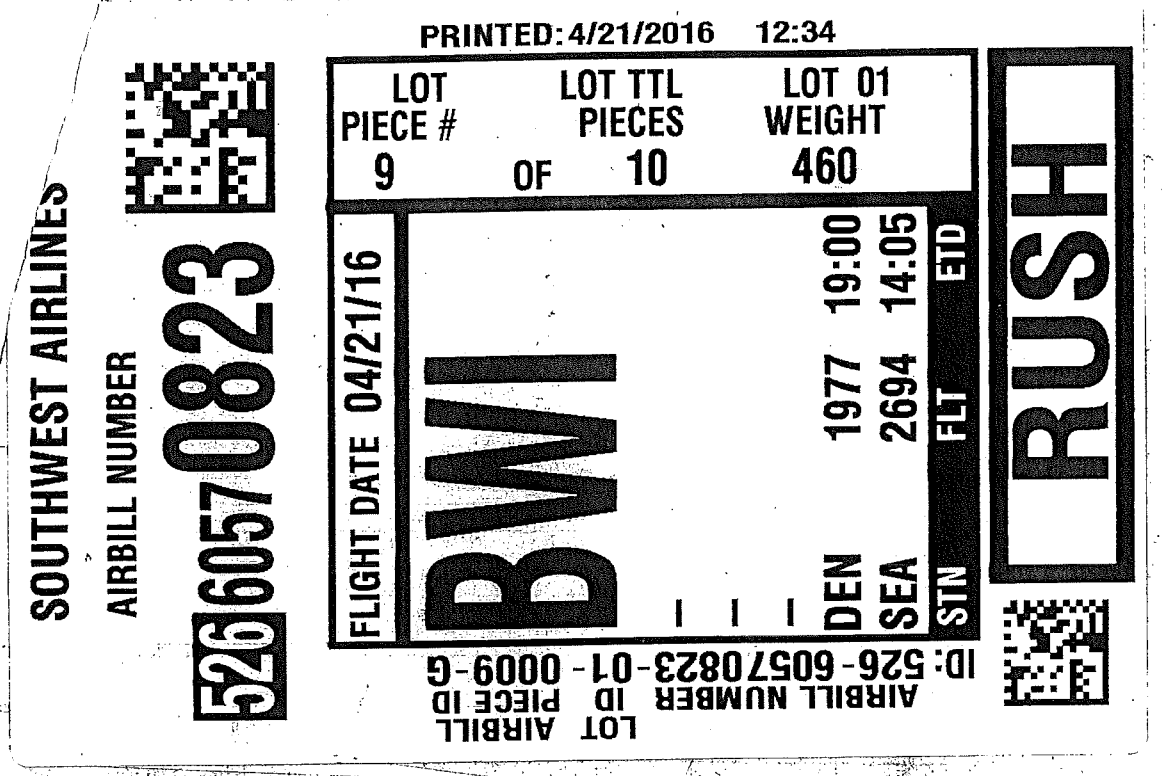
AIRBILL NUMBER
526 6057 0823
PRINTED: 4/21/2016 12:34
LOT PIECE # 7
OF
LOT TTL PIECES 10
LOT 01 WEIGHT 460
FLIGHT DATE 04/21/16
BWI
DEN
SEA
STN
1977
2694
FLT
19:00
14:05
ETD
RUSH
AIRBILL NUMBER ID: 526-6057 0823-01-0007-G
LOT ID
AIRBILL PIECE ID

G# 1653597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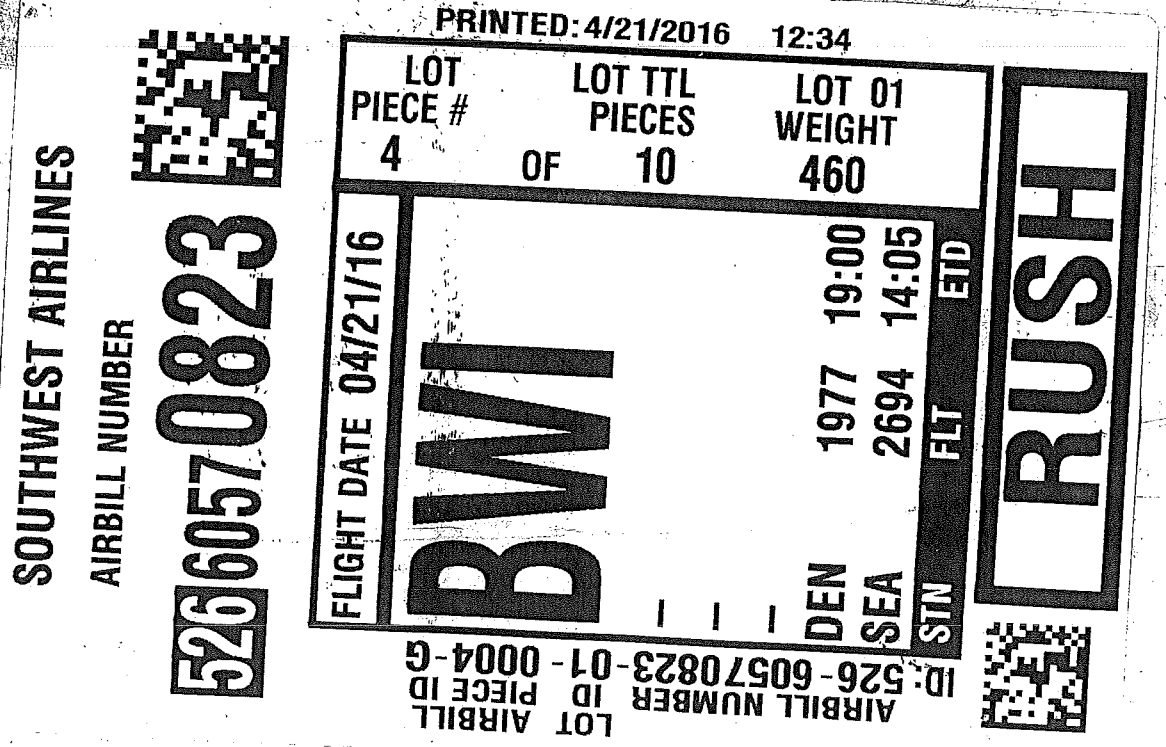
AIRBILL NUMBER
526 6057 0823
LOT PIECE # 9 OF
LOT TTL PIECES 10
LOT 01 WEIGHT 460
FLIGHT DATE 04/21/16
BWI
DEN 1977 19:00
SEA 2694 14:05
STN FLT ETD
RUSH
ID: 526-60570823-01-0009-G
AIRBILL NUMBER ID PIECE ID
LOT AIRBILL


PRINTED: 4/21/2016 12:34
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AIRBILL NUMBER
526 6057 0823
LOT PIECE # 4 OF
LOT TTL PIECES 10
LOT 01 WEIGHT 460
FLIGHT DATE 04/21/16
BWI
DEN 1977 19:00
SEA 2694 14:05
STN FLT ETD
RUSH
ID: 526-60570823-01-0004-G
AIRBILL NUMBER ID PIECE ID
LOT AIRBILL

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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AOC-5

(Groundwater Sample Collection Forms and Analytical Data)

Boeing Chain of Custody

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For Eurofins Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

(1) Client Information

#13419

Site Location: BOEING
Site Project: DEV CTR
Site Program/#: AOC-5 62nd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: ☐ Boeing EHS ☐ Other (specify): _____
Sampler: CHARLES HARDY # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: 26 NWTPH-Gx	26 BETX	55 NITRATE NITRITE SULFAR	(5) Remarks/Comments
BDC101 - 160127	1-27-16	605	Aq	6	2X	2X	2X	0 mg/L Fe+2
BDC102 - 160127	1-27-16	640	Aq	6	X	X	X	1.0 mg/L Fe+2
BDC103 - 160127	1-27-16	720	Aq	6	X	X	X	0 mg/L Fe+2
BDC104 - 160127	1-27-16	800	Aq	6	X	X	X	0 mg/L Fe+2
TRIP BLANKS	1-5-2016	—	Aq	2	X	X		

48 hr. HOLDING TIM

(6) Turnaround Time Requested (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour
Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
[signature]	1-27-2016 930		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by commercial carrier (circle): UPS FedEx Other: _____		Temperature upon Receipt: _____ °C Custody Seals Intact?: Yes No	

BOEING Groundwater Sample Collection Form

62nd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 1st Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-10 I - 160127 (yymmdd)

Collector: Charles Hardy

Date Collected: Feb. 27, 2016 COC Time: 605

JAN

Well Information

Well I. D.: BDC- 101 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 18.42 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.51 (ft.) Measured from: ☐ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.42 ft - 10.51 ft = 7.91 ft x 0.658 Liters/ft = 5.20 Liters

Purge Rate: 2.05 l. ÷ 19 min. = 0.108 Liters/minute

Begin Purge: 5:46 time

End Purge: 605 time

Volume Purged: 2 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV	Others (w/level , turb.)
548	≈ Excell	12.4	3,31	11.68	6.88	44	
550	≈ 200 mL	14.4	532	7.82	6.63	79	
552	≈ 500	14.5	511	7.54	6.49	92	
554	≈ 700	14.5	513	7.63	6.46	96	
556	≈ 950	14.5	508	7.58	6.45	100	
558	≈ 1.2 L	14.5	507 ok	7.76 ✓	6.45 ✓	101	
600	≈ 1.45	14.6	504 ✓	7.55 ✓	6.46 ✓	102	
602	≈ 1.7	14.6	504 ✓	7.73	6.47	102	
604	≈ 1.95	14.6	503 ✓	7.44	6.48	103	
605	≈ 2.05	14.6	503	7.37	6.48	102	
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

(6)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☒ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: Hach Kit Fe++ 0

Signature: C.H.Hardy C. H. Hardy Date: JAN 27 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

62nd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 1st Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-102 - 160127 (yymmdd)

Collector: Charles Hardy

Date Collected: Jan., 27, 2016 COC Time: 640 TAN

Well Information

Well I. D.: BDC-102 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 18.83 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.30 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.83 ft - 10.30 ft = 8.53 ft x 0.658 Liters/ft = 5.61 Liters

Purge Rate: 2.95 l. ÷ 24 min. = 0.120 Liters/minute

Begin Purge: 619 time

End Purge: 640 time

Volume Purged: 2.95 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level, turb.)
621	≈ Full	14.3	531	3.26	6.46	6.a	
623	≈ 450 ml	15.0	552	1.99	6.43	-69	
625	≈ 700	15.2	555	1.20	6.52	-95	
627	≈ 1.0 L	15.3	555	0.92	6.60	-109	
629	≈ 1.3	15.3	552 ✓OK	0.72	6.64	-118	
631	≈ 1.6	15.3	552 ✓	0.56	6.64	-122	
633	≈ 1.9	15.3	551 ✓	0.46	6.63 ✓	-124	
635	≈ 2.2 L	15.4	551 ✓	0.42	6.62 ✓	-124	
637	≈ 2.5	15.4	552 ✓	0.37	6.60 ✓	-124	
639	≈ 2.8	15.4	553	0.34	6.61	-125	
640	≈ 2.95	15.4	553	0.35	6.61	-124	
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☒ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	Nitrite, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: * Hach Kit Fe++ 1.0

Signature: C.H.Hardy C. W. Hardy Date: JAN 27 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

62nd Sample event

Collector: Charles Hardy

Project Site: **Dev. Ctr.** Area: **9-60, AOC 5**

Event: **1st Quarter 2016** (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: **BDC-10**3 - 160127 (yymmdd)

Date Collected: ~~Feb.~~ JAN 27, 2016 COC Time: 720

Well Information

Well I. D.: **BDC-** 103 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: ______

Info.: Size: 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other ______

Total Depth of Well: 18.51 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.22 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.51 ft - 10.22 ft = 8.29 ft x 2.502 Liters/ft = 20.74 Liters

Purge Rate: 3.4 l. ÷ 18 min. = 0.189 Liters/minute

Begin Purge: 7:02 time

End Purge: 720 time

Volume Purged: 3.4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other Sweeper sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level, turb.)
704	≈ 150 mL	13.8	726	1.07	6.51	-24	
706	≈ 550	14.2	740 (762)	0.39	6.47	-17	
708	≈ 1.0 L	14.4	753	0.48	6.49	-14	
710	≈ 1.4	14.4	760	0.50	6.51 OK	-14	
712	≈ 1.8	14.6	765	0.53	6.52 ✓	-12	
714	≈ 2.2	14.5	767 ✓ (012)	0.35	6.54 ✓	-12	
716	≈ 2.6	14.6	768 ✓	0.29	6.55 ✓	-11	
718	≈ 3.0	14.6	769 ✓	0.24	6.55	-11	
720	≈ 3.4	14.6	770 ✓	0.22	6.56	-10.	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other ______

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other ______

Sample Description: (color, turbidity, odor, sheen, etc): ______

(C)

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☐ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☐ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H2SO4	☐ No	

Duplicate Sample No: ______

Comments: * Hach Kit Fe++ 0.

Signature: C.H.Hardy [signature]

Date: JAN 27 2016

Continued on Back ☐

BOEING Groundwater Sample Collection Form

62nd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 1st Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-10 4 - 160127 (yymmdd)

Collector: Charles Hardy

Date Collected: Feb., 27, 2016 COC Time: 800 JAN

Well Information

Well I. D.: BDC- 104 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 18.90 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.02 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.90 ft - 10.02 ft = 8.88 ft x 0.658 Liters/ft = 5.84 Liters

Purge Rate: 2.9 l. ÷ 16 min. = 0.181 Liters/minute

Begin Purge: 744 time

End Purge: 800 time

Volume Purged: 2.9 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☒ other Sweep+ sump

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level , turb.)
746	≈ 200 mL	14.0	373	0.89	6.90	-1.2	
748	≈ 550	14.6	352	0.28	6.81	+4.3	
750	≈ 950	14.8	349	0.19	6.80	5.4	
752	≈ 1.35 L	14.8	346	0.17	6.78	7.6	
754	≈ 1.7 L	14.8	343 ✓OK	0.16	6.75 ✓OK	10.	
756	≈ 2.15	14.8	339 ✓OK	0.16	6.72 ✓OK	12	
758	≈ 2.5	14.8	337 ✓	0.14	6.69 ✓	14	
800	≈ 2.9	14.9	335	0.13	6.67	16	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☐ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☐ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: * Hach Kit Fe++ 0 mg/L

Signature: C.H.Hardy C. H. Hardy Date: JAN. 27 2016 Continued on Back ☐

BOTTLE REQUEST FORM

Prepared by: Charles 'Duffy' Hardy
Client: Boeing EHS
Contact: Jim Bet (Boeing) /Clint Jacob (Landau)
Ship To: Charles 'Duffy' Hardy (206-290-6572)
Boeing @ Western Processing Superfund
20015 72nd Ave South
Kent, WA 98032

Project Name: Boeing_DC: AOC-5
Sampling Frequency: Quarterly **Feb**. May, Aug. & Nov.
Sampling Date: ~Jan. 22nd - 23rd, 2016
Need By Date: Jan. 12, 2016
January , July, 2016

# of coolers: As needed
Trip Blanks?: 1 set, one shipment

Labels?: Provide loose labels
Boxed?: No

No. Of Samples	Analysis Requested	Sample Matrix	Bottle Size	No. Bottles Per Sample	Preservative
4	BETX EPA 8021	Water	40-mL VOA	2 ?	HCl
4	TPH as Gasoline NWTPH-Gx	Water	40-mL VOA	2	HCl
4 qrtly	Sulfate ,& Nitrate* IC E300	Water	40-mL	2	None
+0 semi-ann**	Sulfate & Nitrate* IC E300	Water	40-mL	2	None
Comments:	* Nitrate holding time is 48-hours for analysis Quarterly well list **BDC-101, -102, -103, -104 February**, May , August , & November Jan. April , July, Oct. 2015 **Semi-annual well list add DC-Mw-17a, Mw-18a, Mw -21a & BDC-05-04 (May & Nov.) Apr. & Oct				

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Sample Container Record

Order Number: 182217
Order Date: 12/18/2015

Standard Frm#: 148383

Client: 13419
The Boeing Company
Boeing_DC:AOC-5

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Group: 1

Number of Sample Locations: 4

One complete set of bottles listed below must be filled for each of the 4 sample location(s).

Sample Description	QC Type
BDC-101 Water	
BDC-102 Water	
BDC-103 Water	
BDC-104 Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
4	26	40 ml glass vial	HCl	Method 8021 Water Master	14 days
				NWTPH-Gx water C7-C12	14 days
2	55	40 ml glass vial	None	Nitrate Nitrogen	48 hours
				Nitrite Nitrogen	48 hours
				Sulfate	28 days

Group: 2

Number of Sample Locations: 1

Sample Description	QC Type
Trip Blank Water	Trip Blank

Count	Code	Description	Preservative	Analysis Name	Hold Time
2	26	40 ml glass vial	HCl	Method 8021 Water Master	14 days
				NWTPH-Gx water C7-C12	14 days

Sample Acceptance Policy

Samples must be submitted in a manner that meets the criteria listed below. If these criteria are not met, the laboratory will contact the client to discuss how to proceed with testing. If the client decides to proceed with testing, a comment describing the variation will appear on the analytical report.

- Documentation must be complete and include: sample identification, the location, date and time of collection, collector's name or initials, preservation type, sample type, required analyses, and any special remarks concerning the sample.
- Proper sample labeling must include unique identification on a durable (water resistant) label using indelible ink.
- Samples must be collected in appropriate containers with sufficient volume to perform tests. The laboratory will provide appropriate bottleware.
- Samples must be shipped promptly to meet specified holding times with adequate packing materials to prevent damage during shipment and adequate wet ice to meet method temperature requirements (0-6°C, not frozen).

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
01/12/2016	01/11/2016	Lab Drop Off	Per your Request

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Sample Container Record

Order Number: 182217
Order Date: 12/18/2015

Standard Frm#: 148383

Client: 13419
The Boeing Company
Boeing_DC:AOC-5

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
01/12/2016	01/11/2016	Lab Drop Off	Per your Request

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

February 04, 2016

Project: Boeing_DC:AOC-5

Submittal Date: 01/28/2016
Group Number: 1626950
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
BDC-101-160127 Water	8222308
BDC-101-160127 Water	8222309
BDC-102-160127 Water	8222310
BDC-102-160127 Water	8222311
BDC-103-160127 Water	8222312
BDC-103-160127 Water	8222313
BDC-104-160127 Water	8222314
BDC-104-160127 Water	8222315
Trip Blank Water	8222316

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	The Boeing Company	Attn: Lindsey E. Mahrt
ELECTRONIC COPY TO	Landau	Attn: Chris Kimmel

Respectfully Submitted,

Kay Hower
Manager

(510) 672-3979

Project Name: Boeing_DC:AOC-5
LL Group #: 1626950

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

EPA 300.0, Wet Chemistry

Sample #s: 8222312

Sample was originally analyzed within the 48 hour holding time for nitrate nitrogen, however the value exceeded the calibration range. The analysis was repeated past hold at a greater dilution on 01/29/2016. The result of the second trial is within the calibration range. Client was notifed.

Sample Description: BDC-101-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222308
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 06:05 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

DC101

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**12.3**		1.0	10
01506	Nitrite Nitrogen	14797-65-0	0.10	U	0.10	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16033A53A	02/02/2016 18:32	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16033A53A	02/02/2016 18:32	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16033A53A	02/02/2016 18:32	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16028667121A	01/28/2016 15:29	Drew M Gerhart	10
01506	Nitrite Nitrogen	EPA 300.0	1	16028667121A	01/28/2016 15:13	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-101-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222309
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 06:05 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**40.3**	3.0	10

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16028667121A	01/28/2016 18:09	Drew M Gerhart	10

Sample Description: BDC-102-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222310
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 06:40 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

DC102

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**0.62**		0.10	1
01506	Nitrite Nitrogen	14797-65-0	0.10	U	0.10	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16033A53A	02/02/2016 19:00	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16033A53A	02/02/2016 19:00	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16033A53A	02/02/2016 19:00	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16028667121A	01/28/2016 15:45	Drew M Gerhart	1
01506	Nitrite Nitrogen	EPA 300.0	1	16028667121A	01/28/2016 15:45	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-102-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222311
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 06:40 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**11.9**	0.30	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16028667121A	01/28/2016 18:25	Drew M Gerhart	1

Sample Description: BDC-103-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222312
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 07:20 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

DC103

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	**Benzene**	71-43-2	**3.9**		1.0	1
02102	**Ethylbenzene**	100-41-4	**3.3**		1.0	1
02102	**Toluene**	108-88-3	**1.2**		1.0	1
02102	**m,p-Xylene**	179601-23-1	**12**		1.0	1
02102	**o-Xylene**	95-47-6	**7.0**		1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**32.5**		2.0	20
	Sample was originally analyzed within the 48 hour holding time for nitrate nitrogen, however the value exceeded the calibration range. The analysis was repeated past hold at a greater dilution on 01/29/2016. The result of the second trial is within the calibration range. Client was notifed.					
01506	Nitrite Nitrogen	14797-65-0	0.10	U	0.10	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16033A53A	02/02/2016 19:28	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16033A53A	02/02/2016 19:28	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16033A53A	02/02/2016 19:28	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16028667121A	01/29/2016 10:39	Drew M Gerhart	20
01506	Nitrite Nitrogen	EPA 300.0	1	16028667121A	01/28/2016 16:17	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-103-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222313
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 07:20 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**102**	3.0	10

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16028667121A	01/28/2016 19:13	Drew M Gerhart	10

Sample Description: BDC-104-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222314
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 08:00 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

DC104

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**11.5**		1.0	10
01506	Nitrite Nitrogen	14797-65-0	0.10	U	0.10	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16033A53A	02/02/2016 19:56	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16033A53A	02/02/2016 19:56	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16033A53A	02/02/2016 19:56	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16028667121A	01/28/2016 17:05	Drew M Gerhart	10
01506	Nitrite Nitrogen	EPA 300.0	1	16028667121A	01/28/2016 16:49	Drew M Gerhart	1

Sample Description: BDC-104-160127 Water
Boeing_DC: AOC-5

LL Sample # WW 8222315
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/27/2016 08:00 by CH

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**69.1**	3.0	10

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16028667121A	01/28/2016 19:45	Drew M Gerhart	10

Sample Description: Trip Blank Water
Boeing_DC: AOC-5

LL Sample # WW 8222316
LL Group # 1626950
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 01/05/2016

Submitted: 01/28/2016 10:25
Reported: 02/04/2016 21:38

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

DC-TB

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16033A53A	02/02/2016 17:09	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16033A53A	02/02/2016 17:09	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16033A53A	02/02/2016 17:09	Jeremy C Giffin	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/04/2016 21:38

Group Number: 1626950

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: 16033A53A	Sample number(s): 8222308,8222310,8222312,8222314,8222316		
Benzene	1.0	U	1.0
Ethylbenzene	1.0	U	1.0
NWTPH-Gx water C7-C12	250	U	250
Toluene	1.0	U	1.0
m,p-Xylene	1.0	U	1.0
o-Xylene	1.0	U	1.0

Analysis Name	Result		MDL
	mg/l		mg/l
Batch number: 16028667121A	Sample number(s): 8222308-8222315		
Nitrate Nitrogen	0.050	U	0.050
Nitrite Nitrogen	0.050	U	0.050
Sulfate	0.30	U	0.30

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16033A53A	Sample number(s): 8222308,8222310,8222312,8222314,8222316								
Benzene	20	20.84	20	20.16	104	101	80-120	3	30
Ethylbenzene	20.1	20.71	20.1	20.18	103	100	80-120	3	30
NWTPH-Gx water C7-C12	1100	987.49	1100	998.28	90	91	80-123	1	30
Toluene	20.2	20.83	20.2	20.35	103	101	80-120	2	30
m,p-Xylene	40.2	44.12	40.2	42.74	110	106	80-120	3	30
o-Xylene	20	20.81	20	20.29	104	101	80-120	3	30
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16028667121A	Sample number(s): 8222308-8222315								
Nitrate Nitrogen	0.750	0.714			95		90-110		
Nitrite Nitrogen	0.750	0.686			91		90-110		
Sulfate	7.50	7.36			98		90-110		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 02/04/2016 21:38

Group Number: 1626950

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 16028667121A	Sample number(s): 8222308-8222315 UNSPK: P221858									
Nitrate Nitrogen	0.457	5.00	5.42			99		90-110		
Nitrite Nitrogen	0.25 U	5.00	4.69			94		90-110		
Sulfate	18.25	50	70.89			105		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 16028667121A	Sample number(s): 8222308-8222315 BKG: P221858			
Nitrate Nitrogen	0.457	0.463	1 (1)	15
Nitrite Nitrogen	0.25 U	0.25 U	0 (1)	15
Sulfate	18.25	18.43	1 (1)	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8021B BTEX Water
Batch number: 16033A53A

	Trifluorotoluene-P	Trifluorotoluene-F
8222308	99	93
8222310	99	107
8222312	98	102
8222314	99	112
8222316	99	94
Blank	100	107
LCS	99	104
LCSD	99	105
Limits:	51-120	63-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Boeing Chain of Custody

eurofins | Lancaster Laboratories

Acct. # 13419 For Eurofins Lancaster Laboratories use only Group # 1626950 Sample # 8222308-16

Please print. Instructions on reverse side correspond.

(1) #13419 **Client Information**

Site Location: BOEING
Site Project: DEV CTR
Site Program/#: AOC-5 62nd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: ☐ Boeing EHS ☐ Other (specify):
Sampler: CHARLES HARDY # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: 26 NWTPH-Gx	26 BETX	55 NITRATE NITRITE SULFATE	(5) Remarks/Comments
BDC101-160127	1-27-16	605	Aq	6	2X	2X	2X	0 mg/L Fe^{+2}
BDC102-160127	1-27-16	640	Aq	6	X	X	X	1.0 mg/L Fe^{+2}
BDC103-160127	1-27-16	720	Aq	6	X	X	X	0 mg/L Fe^{+2}
BDC104-160127	1-27-16	800	Aq	6	X	X	X	0 mg/L Fe^{+2}
TRIP BLANKS	1-5-2016	—	Aq	2	X	X		

48 hr. HOLDING TIM

(6) **Turnaround Time Requested** (please circle)

Standard | 5 day | 4 day
72 hour | 48 hour | 24 hour

Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
[signature]	1-27-2016 930		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 1-28-16 / 1025

Relinquished by commercial carrier (circle): UPS FedEx Other:

Temperature upon Receipt: 0.4 °C

Custody Seals Intact?: Yes No

Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300

The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client.

Issued by Dept. 40 Management 7063.02

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 134728

Group Number(s): 1626950

Client: Boeing

Delivery and Receipt Information

Delivery Method:	~~Fed-Ex~~ SeaTac 1/28/16	Arrival Timestamp:	01/28/2016 10:25
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 11:06 on 01/28/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	0.4	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425
T 717-656-2300
F 717-656-2681
www.LancasterLabs.com

1626950

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1 From

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( ) -

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For nonresidential deliveries.

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By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

For FedEx Use Only	
Employee Number	Base Charges
Other	Total Charges

2 To *Shipment will not be accepted if address below is altered.* M-10091 Rev. 3/10

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EUROFINS LANCASTER LABS
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601
(717) 656-2300

NONREDEEMABLE
Please see the back of the receipt for important terms and conditions.

SATURDAY DELIVERY
Shipments tendered on Friday are delivered on Saturday to most locations.

8047 1333 3198

Form ID 0667

There is an artificial watermark on this document. Hold at an angle to view.

ORIGIN ID:SEAA

SHIP DATE: 27JAN16
ACTWGT: 24.30 LB
CAD: /POS1621
DIMS: 22x13x11 IN

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UNITED STATES US

TO

SAMPLE RECIEVING
2425 NEW HOLLAND PIKE

LANCASTER PA 17601
(717) 656-2300 REF:
INV:
PO: DEPT:

FedEx Express

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J16101601040 1uv

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17601
PA-US **MDT**

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Boeing Chain of Custody

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For Eurofins Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Please print. Instructions on reverse side correspond.

1 Client Information

#13419

Site Location: BOEING
Site Project: DEV. CTR.
Site Program/#: AOC-5 63rd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: [X] Boeing EHS [ ] Other (specify): _____
Sampler: CHARLES HARDY # of Coolers: _____

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: 26 NW/TPH-Gx	26 BETX	SULFATE	NITRATE NITRITE	5 Remarks/Comments: Fe^{+2}
BDC-101-160413	4-13-2016	615	Ag	6	X	X	X		Ø
BDC-102-160413	4-13-2016	650	Ag	6	X	X	X		1.0 mg/L
BDC-103-160413	4-13-206	725	Ag	6	X	X	X		Ø
BDC-104-160413	4-13-2016	755	Ag	6	X	X	X		Ø
BDC-05-04-160413	4-13-2016	825	Ag	2			X		1.0 mg/L
DC-MW-21A-160413	4-13-2016	855	Ag	2			X		Ø
DC-MW-18A-160413	4-13-2016	925	Ag	2			X		Ø
DC-MW-17A-160413	4-13-2016	950	Ag	2			X		1.8 mg/L
—									
TRIP BLANKS	3-1 3-72	—	Ag	2	X	X			

RUSH OR SHORT HOLD TIME ENCLOSED

6 Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
C. Hardy	4-13-2016 1130		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Relinquished by commercial carrier (circle): UPS FedEx (Other: LT COURIER)
Temperature upon Receipt: _____ °C
Custody Seals Intact?: Yes No

BOEING Groundwater Sample Collection Form

63nd Sample event

Collector: Charles Hardy

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-101 - 160513 (yymmdd)

Date Collected: April, 13, 2016 COC Time: 615

Well Information

Well I. D.: BDC-101 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition:

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 18.42 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.27 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.42 ft - 11.27 ft = 7.15 ft x 0.658 Liters/ft = 4.70 Liters

Purge Rate: 2.5 L ÷ 20 min. = 0.125 Liters/minute

Begin Purge: 5:55 time

End Purge: 615 time

Volume Purged: 2.5 Liters 4/11

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level, turb.)
557	≈ 100 mL	14.0	584	7.87	7.88	13	
559	≈ 400 mL	14.0	505	6.65	7.48	39	
601	≈ 600 mL	13.9	479 (464)	6.15	7.29	49	
603	≈ 850	13.9	475	6.06	7.21	53	
605	≈ 1.1 L	13.8	471	6.13	7.13	56	
607	≈ 1.3	13.7	465 ✓	5.98 ✓	7.07	60	
609	≈ 1.6	13.8	459 x 460	6.01 ✓	7.03	62	
611	≈ 1.9	13.7	457 ✓	6.02 ✓	6.99	64	
613	≈ 2.2	13.7	454 ✓	5.91 ✓	6.97 ✓	66	OK
615	≈ 2.5	13.8	452	5.94	6.94 ✓	68	

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. Submersible **Pump**

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc):

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☒ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H2SO4	☐ No	

Duplicate Sample No:

Comments: * Hach Kit Fe++ 0 mg/L

Signature: C.H.Hardy C. H. Hardy Date: April, 13 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

63rd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-102 - 160413 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 13, 2016 COC Time: 650

Well Information

Well I. D.: BDC- 102 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 18.83 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.09 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.83 ft - 11.09 ft = 7.74 ft x 0.658 Liters/ft = 5.09 Liters

Purge Rate: 2.50 l. + 22 min. = 0.114 Liters/minute

Begin Purge: 623 time

End Purge: 650 time

Volume Purged: 2.50 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level , turb.)
630	≈ 200 mL	14.4	527	1.30	6.83	66	
632	≈ 450	14.3	654	2.18	6.79	54	
634	≈ 700	14.0	683	3.24	6.75	27	
636	≈ 900	14.0	688	3.54	6.68	9	
638	≈ 1.1	14.0	681	2.08	6.65	-9	
640	≈ 1.3	14.1	679 ✓	1.58	6.63	-19	
642	≈ 1.55	14.1	677 ✓	1.22	6.62 ✓	-29	
644	≈ 1.8	14.1	677 ✓	0.96	6.63 ✓	-37	
646	≈ 2.05	14.0	676 ✓	0.81	6.63 ✓	-42	
648	≈ 2.3	14.1	673 ✓	0.73	6.62 ✓	-45	
650	≈ 2.50	14.0	671	0.70	6.61 ✓	-48	
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☒ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☐ Polyethylene ☐ HDPE ☒ PVC ☒ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☒ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: ✱ Hach Kit Fe++ 1.0 mg/L

Signature: C.H.Hardy C. H. Hardy Date: APRIL 13 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

63rd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-103-160413 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 13, 2016 COC Time: 725

Well Information

Well I. D.: BDC-103 Well Condition: Secure? ☐ Yes ☐ No: Describe Condition: _____

Info.: Size: 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 18.51 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.97 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.51 ft - 10.97 ft = 7.54 ft x 0.658 Liters/ft = 12.37 Liters

Purge Rate: 3.35 l. + 20 min. = 0.1675 Liters/minute 2.352

Begin Purge: 705 time

End Purge: 725 time

Volume Purged: 3.35 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level , turb.)
707	≈ 100 mL	12.1	809	1.48	6.66	1.4	
709	≈ 500 mL	12.6	851	1.00	6.59	3.0	
711	≈ 900	12.5	895 922	0.85	6.58	3.7	
713	≈ 1.2 L	12.7	911	0.75	6.58 ✓	4.3	
715	≈ 1.65	12.7	920	0.66	6.58 ✓	4.6	
717	≈ 1.95	12.7	925	0.62	6.59 ✓	4.9	
719	≈ 2.3	12.7	927 ✓	0.56	6.59 ✓	5.3	
721	≈ 2.65	12.7	928 ✓	0.53	6.59	5.7	
723	≈ 3.0	12.6	928 ✓	0.50	6.60	6.0	
725	≈ 3.35	12.6	927	0.46	6.59	6.7	
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☐ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☐ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: Hach Kit Fe++ 0 mg/L

Signature: C.H.Hardy C. H. Hardy Date APRIL 13 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

63rd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-104-160413 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 13, 2016 COC Time: 755

Well Information

Well I. D.: BDC-104 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 18.90 (ft.) ☒ historical or ☐ measured)

Present Water Level: 10.73 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 18.90 ft - 10.73 ft = 8.17 ft x 0.658 Liters/ft = 5.375 Liters

Purge Rate: 2.35 l. + 15 min. = 0.157 Liters/minute

Begin Purge: 740 time

End Purge: 755 time

Volume Purged: 2.35 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level , turb.)
742	≈ 150 mL	13.1	414	3.47	6.94	-1.6	
744	≈ 500 mL	13.3	370 353	3.14	6.93	-1.5	
746	≈ 800 mL	13.5	361 350	3.03	6.89	+6.5	
748	≈ 1.15 L	13.6	358	2.86	6.86	13.4	
750	≈ 1.5	13.6	356	2.84	6.83	18.7	
752	≈ 1.8 L	13.6	357	2.80	6.79	23	
754	≈ 2.15	13.5	357	2.68	6.77	28	
755	≈ 2.35	13.5	357	2.65	6.75	31	
758	≈						
800	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☐ Polyethylene ☒ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☒ Glass	H-Cl	☒ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	Nitrite, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: ★ Hach Kit Fe++ 0 mg/L

Signature: C.H.Hardy C. H. Hardy. Date APR 12 13 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

63rd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: BDC-~~10~~ 05-04-160413 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 1, 2016 COC Time: 825

Well Information

Well I. D.: BDC-05-04 Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 25.36 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.84 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 25.36 ft - 11.84 ft = 13.52 ft x 2.502 Liters/ft = 33.82 Liters

Purge Rate: 2.25 l. ÷ 16 min. = 0.141 Liters/minute

Begin Purge: 8:09 time

End Purge: 825 time

Volume Purged: 2.25 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1″		0.170	0.140
	2″	0.776	0.658	0.579
	2.5″		0.942	0.833
	4″	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV	Others (w/level , turb.)
811	≈100 mL	13.3	263	1.77	6.57	40	
813	≈400 mL	13.5	248	0.71	6.48	46	
815	≈700	13.7	247	0.66	6.45	48	
817	≈1.0	13.8	249	0.84	6.40	47	
819	≈1.35	13.7	248	0.97	6.37	47	
821	≈1.65	13.6	248 ✓	0.75	6.35 ✓ OK	46	
823	≈1.95	13.6	247 ✓	0.64	6.31 ✓	47	
825	≈2.25	13.7	249 ✓	0.57	6.28	46	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☐ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☐ Glass	H-Cl	☐ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: * Hach Kit Fe++

Signature: C.H. Hardy C. H. Hardy Date: APRIL 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

63rd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: ~~BDC-10~~ MW 17A-160413 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 13, 2016 COC Time: 950

Well Information

Well I. D.: ~~BDC-~~ MW-17A Well Condition: Secure? ☐ Yes ☒ No: Describe Condition: well seal off, CASING

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other

Total Depth of Well: 19.0 (ft.) ☒ historical or ☐ measured)

Present Water Level: 12.16 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 19.0 ft - 12.16 ft = 6.84 ft x 0.657 Liters/ft = 4.50 Liters

Purge Rate: 2.55 l. ÷ 16 min. = _____ Liters/minute

Begin Purge: 9:34 time

End Purge: 950 time

Volume Purged: 2.55 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	Conductivity +/- 3%	D. O. (mg/l) +/- 10%	pH +/- 0.10 unit	ORP mV	Others (w/level, turb.)
936	≈ 150 mL	17.4	9,246	0.55	6.26	-137	cola brown
938	≈ 450	17.7	9,317	0.36	6.42	-158	
940	≈ 800	18.0	9,295	0.34	6.51	-164	
942	≈ 1.15L	18.0	9,213	0.34	6.55	-168	
944	≈ 1.5 L	18.0	9,140	0.33	6.59	-170	
946	≈ 1.85	17.9	9056	0.37	6.62	-172	
948	≈ 2.1 L	18.1	8,950	0.40	6.64	-173	
950	≈ 2.55	18.1	8,869	0.31	6.66	-175	
	≈ ? IN SECTION		WELL	??			
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☐ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☐ Glass	H-Cl	☐ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	Nitrite, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: * Hach Kit Fe++ 1.8 mg/L cola Brown

Signature: C.H. Hardy C. H. Hardy Date: APR 13 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

63rd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: ~~BDC-10~~ MW18A-160413 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 13, 2016 COC Time: 925

Well Information

Well I. D.: ~~BDC-~~ MW18A Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 20.02 (ft.) ☒ historical or ☐ measured)

Present Water Level: 11.87 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 20.02 ft - 11.87 ft = 8.15 ft x 0.658 Liters/ft = 5.36 Liters

Purge Rate: 2.4 l. ÷ 16 min. = 0.150 Liters/minute

Begin Purge: 909 time

End Purge: 925 time

Volume Purged: 2.4 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV	Others (w/level , turb.)
911	≈ 100 mL	15.6	800	3.10	6.30	65	
913	≈ 450mL	16.0	750	1.29	6.41	52	
915	≈ 800	16.2	730	0.99	6.47	46	
917	≈ 1.15L	16.2	731	0.93	6.49	43	
919	≈ 1.45	16.3	733 ✓ OK	0.90	6.51 ✓ OK	41	
921	≈ 1.75	16.3	733 ✓	0.81	6.52	40	
923	≈ 2.1 L	16.3	735	0.79	6.53	39	
925	≈ 2.4	16.3	741	0.76	6.83	38	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☐ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☐ Glass	H-Cl	☐ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: * Hach Kit Fe++ 0 mg/L

Signature: C.H. Hardy C. H. Hardy Date: APRIL 13 2016 Continued on Back ☐

BOEING Groundwater Sample Collection Form

63rd Sample event

Project Site: Dev. Ctr. Area: 9-60, AOC 5

Event: 2nd Quarter 2016 (post Nitrate Inj) labor # 7KDVCREM

SAMPLE I D: ~~BDE-10~~ MW21A-1604-160413 (yymmdd)

Collector: Charles Hardy

Date Collected: April, 13, 2016 COC Time: 855

Well Information

Well I. D.: ~~BDE~~ MW 21A Well Condition: Secure? ☒ Yes ☐ No: Describe Condition: _____

Info.: Size: 2 4 (inches) 40 (Sch.) Material: ☒ PVC, ☐ Stainless Steel, ☐ Other _____

Total Depth of Well: 19.90 (ft.) ☒ historical or ☐ measured)

Present Water Level: 12.1 (ft.) Measured from: ☒ Well Casing, or ☐ Protective Monument

Traditional Purge Volume Calc.: 19.90 ft - 12.1 ft = 7.8 ft x ~~2~~ 2 Liters/ft = 5.13 Liters

Purge Rate: 2.7 l. ÷ 15 min. = 0.18 Liters/minute ~~0.658~~

Begin Purge: 846 time

End Purge: 855 time

Volume Purged: 2.7 Liters

Casing Volume by Size & Schedule (Liters/ft)	Diameter	10s	Sch 40	Sch 80
	1"		0.170	0.140
	2"	0.776	0.658	0.579
	2.5"		0.942	0.833
	4"	2.995	2.502	2.260

Purge water disposal to: ☐ 55-gal drum, ☐ storage tank ☐ treatment system ☐ ground ☐ other _____

Recorded Parameters for Stabilization during Purging

Time	Vol. Purged	Temp. (°F or °C)	+/- 3% Conductivity	+/- 10% D. O. (mg/l)	+/- 0.10 unit pH	ORP mV	Others (w/level , turb.)
842	≈ 150 mL	13.3	236	3.15	6.46	42	
844	≈ 550 mL	14.6	245	2.74	6.36	49	
846	≈ 950	14.8	246	2.62	6.39	49	
848	≈ 1.3 L	14.8	248	2.35	6.40	51	
850	≈ 1.7	14.8	250	2.21	6.39	52	
852	≈ 2.1	14.9	253	2.16	6.38	54	
854	≈ 2.5	15.1	257	2.08	6.36	56	
855	≈ 2.7	15.3	259	2.08	6.35	56	
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						
	≈						

Sample Collection Information

Sample Collected with: ☐ disposable **Bailer**, ☒ Peristaltic, ☐ Bladder, ☐ Inertia Lift, or ☐ Elect. .Submersible **Pump**

Made of: ☒ Polyethylene ☐ HDPE ☐ PVC ☐ Teflon ☐ Stainless Steel ☐ Other _____

Decontamination: ☒ N/A dedicated system ☐ Alconox Wash ☐ Tap Rinse ☐ D.I. Rinse ☐ Other _____

Sample Description: (color, turbidity, odor, sheen, etc): _____

Quantity	Size	Type	Preservative	Field Filtered	Laboratory Analysis Method
4	40 ml	☐ Glass	H-Cl	☐ No	NWTPH-Gx & BETX (EPA 8021B)(LLI code 26)
2	40 ml	☒ Glass c	none	☒ No	*Nitrite*, Nitrate & Sulfate (LLI code 55)
	500 ml	☐ HDPE Plastic	H_2SO_4	☐ No	

Duplicate Sample No: _____

Comments: Hach Kit Fe++ 0 mg/L

Signature: C.H.Hardy C. H. Hardy Date: APRIL 13 2016 Continued on Back ☐

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185523
Order Date: 03/09/2016

Standard Frm#: 148383

Client: 13419
The Boeing Company
Boeing_DC:AOC-5

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Group: 1

Number of Sample Locations: 4

One complete set of bottles listed below must be filled for each of the 4 sample location(s).

Sample Description	QC Type
BDC-101 Water	
BDC-102 Water	
BDC-103 Water	
BDC-104 Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
4	26	40 ml glass vial	HCl	Method 8021 Water Master	14 days
				NWTPH-Gx water C7-C12	14 days
2	55	40 ml glass vial	None	Nitrate Nitrogen	48 hours
				Nitrite Nitrogen	48 hours
				Sulfate	28 days

Group: 2

Number of Sample Locations: 1

Sample Description	QC Type
Trip Blank Water	Trip Blank

Count	Code	Description	Preservative	Analysis Name	Hold Time
2	26	40 ml glass vial	HCl	Method 8021 Water Master	14 days
				NWTPH-Gx water C7-C12	14 days

Sample Acceptance Policy

Samples must be submitted in a manner that meets the criteria listed below. If these criteria are not met, the laboratory will contact the client to discuss how to proceed with testing. If the client decides to proceed with testing, a comment describing the variation will appear on the analytical report.

- Documentation must be complete and include: sample identification, the location, date and time of collection, collector's name or initials, preservation type, sample type, required analyses, and any special remarks concerning the sample.
- Proper sample labeling must include unique identification on a durable (water resistant) label using indelible ink.
- Samples must be collected in appropriate containers with sufficient volume to perform tests. The laboratory will provide appropriate bottleware.
- Samples must be shipped promptly to meet specified holding times with adequate packing materials to prevent damage during shipment and adequate wet ice to meet method temperature requirements (0-6°C, not frozen).

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 185523
Order Date: 03/09/2016

Standard Frm#: 148383

Client: 13419
The Boeing Company
Boeing_DC:AOC-5

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/29/2016	03/28/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

Sample Container Record

Order Number: 186541
Order Date: 03/29/2016

Standard Frm#: 148383

Client: 13419
The Boeing Company
Boeing_DC:AOC-5

Ship To:
Boeing
Boeing@ Western Process. Sfund
20015 72nd Ave South
Kent, WA 98032
Attn: Charles 'Duffy' Hardy

Group: 1

Number of Sample Locations: 4

One complete set of bottles listed below must be filled for each of the 4 sample location(s).

Sample Description	QC Type
DC-MW-17a Water	
DC-MW-18a Water	
DC-MW-21a Water	
BDC-05-04 Water	

Count	Code	Description	Preservative	Analysis Name	Hold Time
2	55	40 ml glass vial	None	Nitrate	48 hours
				Sulfate	28 days

Sample Acceptance Policy

Samples must be submitted in a manner that meets the criteria listed below. If these criteria are not met, the laboratory will contact the client to discuss how to proceed with testing. If the client decides to proceed with testing, a comment describing the variation will appear on the analytical report.

- Documentation must be complete and include: sample identification, the location, date and time of collection, collector's name or initials, preservation type, sample type, required analyses, and any special remarks concerning the sample.
- Proper sample labeling must include unique identification on a durable (water resistant) label using indelible ink.
- Samples must be collected in appropriate containers with sufficient volume to perform tests. The laboratory will provide appropriate bottleware.
- Samples must be shipped promptly to meet specified holding times with adequate packing materials to prevent damage during shipment and adequate wet ice to meet method temperature requirements (0-6°C, not frozen).

If you have any questions, please contact your Client Service Representative, Kay Hower, at (717)656-2300 x1198

Date Needed:	Pack By:	Shipping Method:	This order is:
03/30/2016	03/29/2016	Lab Drop Off	Per your Request

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

Report Date: April 22, 2016

Project: Boeing_DC:AOC-5

Submittal Date: 04/14/2016
Group Number: 1650615
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
BDC-101-160413 Water	8333214
BDC-101-160413 Water	8333215
BDC-102-160413 Water	8333216
BDC-102-160413 Water	8333217
BDC-103-160413 Water	8333218
BDC-103-160413 Water	8333219
BDC-104-160413 Water	8333220
BDC-104-160413 Water	8333221
BDC-05-04-160413 Water	8333222
BDC-05-04-160413 Water	8333223
DC-MW-21a-160413 Water	8333224
DC-MW-21a-160413 Water	8333225
DC-MW-18a-160413 Water	8333226
DC-MW-18a-160413 Water	8333227
DC-MW-17a-160413 Water	8333228
DC-MW-17a-160413 Water	8333229
Trip Blank Water	8333230

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

Electronic Copy To	The Boeing Company	Attn: Lindsey E. Mahrt
Electronic Copy To	Landau	Attn: Chris Kimmel

Respectfully Submitted,

Kay Hower
Manager

(510) 672-3979

Project Name: Boeing_DC:AOC-5
LL Group #: 1650615

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: BDC-101-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333214
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 06:15 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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PO Box 3707
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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**23.7**		1.0	10
01506	Nitrite Nitrogen	14797-65-0	0.10	U	0.10	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16107A94A	04/18/2016 16:31	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16107A94A	04/18/2016 16:31	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16107A94A	04/18/2016 16:31	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 17:42	Drew M Gerhart	10
01506	Nitrite Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 17:25	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-101-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333215
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 06:15 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**65.4**	3.0	10

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16105667601B	04/15/2016 19:30	Drew M Gerhart	10

Sample Description: BDC-102-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333216
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 06:50 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**12.8**		1.0	10
01506	Nitrite Nitrogen	14797-65-0	0.10	U	0.10	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16107A94A	04/18/2016 16:56	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16107A94A	04/18/2016 16:56	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16107A94A	04/18/2016 16:56	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 18:49	Drew M Gerhart	10
01506	Nitrite Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 18:32	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-102-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333217
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 06:50 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**43.1**	3.0	10

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16105667601B	04/15/2016 00:24	Drew M Gerhart	10

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Analysis Report

Sample Description: BDC-103-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333218
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 07:25 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	**o-Xylene**	95-47-6	**2.0**		1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**102**		10.0	100
01506	**Nitrite Nitrogen**	14797-65-0	**0.43**		0.10	1

Sample Comments

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16107A94A	04/18/2016 17:22	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16107A94A	04/18/2016 17:22	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16107A94A	04/18/2016 17:22	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 19:39	Drew M Gerhart	100
01506	Nitrite Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 19:06	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-103-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333219
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 07:25 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**51.0**	1.5	5

Sample Comments

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Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16105667601B	04/15/2016 20:07	Drew M Gerhart	5

Sample Description: BDC-104-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333220
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 07:55 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	**Nitrate Nitrogen**	14797-55-8	**20.2**		1.0	10
01506	Nitrite Nitrogen	14797-65-0	0.10	U	0.10	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16107A94A	04/18/2016 17:47	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16107A94A	04/18/2016 17:47	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16107A94A	04/18/2016 17:47	Jeremy C Giffin	1
00368	Nitrate Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 20:13	Drew M Gerhart	10
01506	Nitrite Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 19:56	Drew M Gerhart	1

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Analysis Report

Sample Description: BDC-104-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333221
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 07:55 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**96.9**	3.0	10

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	2	16105667601B	04/15/2016 20:31	Drew M Gerhart	10

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Analysis Report

Sample Description: BDC-05-04-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333222
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 08:25 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00368	**Nitrate Nitrogen**	14797-55-8	**5.5**	1.0	10

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00368	Nitrate Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 20:46	Drew M Gerhart	10

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Analysis Report

Sample Description: BDC-05-04-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333223
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 08:25 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**13.9**	1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16105667601B	04/15/2016 02:21	Drew M Gerhart	1

Sample Description: DC-MW-21a-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333224
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 08:55 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/l**		**mg/l**	
00368	Nitrate Nitrogen	14797-55-8	0.10	U	0.10	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00368	Nitrate Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 16:01	Drew M Gerhart	1

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Analysis Report

Sample Description: DC-MW-21a-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333225
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 08:55 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**4.9**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16105667601B	04/15/2016 02:38	Drew M Gerhart	1

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Analysis Report

Sample Description: DC-MW-18a-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333226
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 09:25 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00368	**Nitrate Nitrogen**	14797-55-8	**0.10**	0.10	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00368	Nitrate Nitrogen	EPA 300.0	1	16105667601A	04/14/2016 16:18	Drew M Gerhart	1

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Analysis Report

Sample Description: DC-MW-18a-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333227
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 09:25 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00228	**Sulfate**	14808-79-8	**42.8**	1.5	5

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16105667601B	04/15/2016 20:43	Drew M Gerhart	5

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Analysis Report

Sample Description: DC-MW-17a-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333228
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 09:50 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l	mg/l	
00368	**Nitrate Nitrogen**	14797-55-8	**1.7**	1.0	10

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00368	Nitrate Nitrogen	EPA 300.0	2	16105667601A	04/14/2016 16:35	Drew M Gerhart	10

Sample Description: DC-MW-17a-160413 Water
Boeing_DC: AOC-5

LL Sample # WW 8333229
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 04/13/2016 09:50 by CH

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

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CAT No.	Analysis Name	CAS Number	Result		Method Detection Limit	Dilution Factor
Wet Chemistry	**EPA 300.0**		mg/l		mg/l	
00228	**Sulfate**	14808-79-8	**0.90**	**J**	0.30	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00228	Sulfate	EPA 300.0	1	16105667601B	04/15/2016 04:18	Drew M Gerhart	1

Sample Description: Trip Blank Water
Boeing_DC: AOC-5

LL Sample # WW 8333230
LL Group # 1650615
Account # 13419

Project Name: Boeing_DC:AOC-5

Collected: 03/01/2016

Submitted: 04/14/2016 09:30
Reported: 04/22/2016 22:59

The Boeing Company
PO Box 3707
MC 1W-12
Seattle WA 98124

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC Volatiles	**ECY 97-602 NWTPH-Gx**		**ug/l**		**ug/l**	
08274	NWTPH-Gx water C7-C12	n.a.	250	U	250	1
GC Volatiles	**SW-846 8021B**		**ug/l**		**ug/l**	
02102	Benzene	71-43-2	1.0	U	1.0	1
02102	Ethylbenzene	100-41-4	1.0	U	1.0	1
02102	Toluene	108-88-3	1.0	U	1.0	1
02102	m,p-Xylene	179601-23-1	1.0	U	1.0	1
02102	o-Xylene	95-47-6	1.0	U	1.0	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16107A94A	04/18/2016 15:39	Jeremy C Giffin	1
02102	8021B BTEX Water	SW-846 8021B	1	16107A94A	04/18/2016 15:39	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16107A94A	04/18/2016 15:39	Jeremy C Giffin	1

Quality Control Summary

Client Name: The Boeing Company
Reported: 04/22/2016 22:59

Group Number: 1650615

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result		LOQ
	ug/l		ug/l
Batch number: 16107A94A	Sample number(s): 8333214,8333216,8333218,8333220,8333230		
Benzene	1.0	U	1.0
Ethylbenzene	1.0	U	1.0
NWTPH-Gx water C7-C12	250	U	250
Toluene	1.0	U	1.0
m,p-Xylene	1.0	U	1.0
o-Xylene	1.0	U	1.0
	mg/l		mg/l
Batch number: 16105667601A	Sample number(s): 8333214,8333216,8333218,8333220,8333222,8333224,8333226,8333228		
Nitrate Nitrogen	0.10	U	0.10
Nitrite Nitrogen	0.10	U	0.10

Analysis Name	Result		MDL
	mg/l		mg/l
Batch number: 16105667601B	Sample number(s): 8333215,8333217,8333219,8333221,8333223,8333225,8333227,8333229		
Sulfate	0.30	U	0.30

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16107A94A	Sample number(s): 8333214,8333216,8333218,8333220,8333230								
Benzene	20	19.9			99		80-120		
Ethylbenzene	20.1	19.74			98		80-120		
NWTPH-Gx water C7-C12	1100	1087.16	1100	1096.05	99	100	79-120	1	30
Toluene	20.2	20.2			100		80-120		
m,p-Xylene	40.2	41.39			103		80-120		
o-Xylene	20	19.62			98		80-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16105667601A	Sample number(s): 8333214,8333216,8333218,8333220,8333222,8333224,8333226,8333228								
Nitrate Nitrogen	0.750	0.729			97		90-110		
Nitrite Nitrogen	0.750	0.727			97		90-110		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 16105667601B	Sample number(s): 8333215,8333217,8333219,8333221,8333223,8333225,8333227,8333229								
Sulfate	7.50	7.71			103		90-110		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Reported: 04/22/2016 22:59

Group Number: 1650615

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 16107A94A	Sample number(s): 8333214,8333216,8333218,8333220,8333230 UNSPK: P335506									
Benzene	0.202	20	20.64	20	20.71	102	103	80-120	0	30
Ethylbenzene	1.0 U	20.1	20.4	20.1	20.57	102	102	80-120	1	30
Toluene	0.228	20.2	21.27	20.2	21.26	104	104	80-120	0	30
m,p-Xylene	1.0 U	40.2	42.43	40.2	43.09	106	107	80-120	2	30
o-Xylene	1.0 U	20	20.19	20	20.45	101	102	80-120	1	30
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 16105667601A	Sample number(s): 8333214,8333216,8333218,8333220,8333222,8333224,8333226,8333228 UNSPK: 8333224, P333224									
Nitrate Nitrogen	0.0963	1.00	1.11			101		90-110		
Nitrite Nitrogen	0.10 U	1.00	0.974			97		90-110		
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 16105667601B	Sample number(s): 8333215,8333217,8333219,8333221,8333223,8333225,8333227,8333229 UNSPK: 8333215									
Sulfate	65.45	100	163.42			98		90-110		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/l	mg/l		
Batch number: 16105667601A	Sample number(s): 8333214,8333216,8333218,8333220,8333222,8333224,8333226,8333228 BKG: 8333224, P333224			
Nitrate Nitrogen	0.0963	0.0965	0 (1)	15
Nitrite Nitrogen	0.10 U	0.10 U	0 (1)	15
	mg/l	mg/l		
Batch number: 16105667601B	Sample number(s): 8333215,8333217,8333219,8333221,8333223,8333225,8333227,8333229 BKG: 8333215			
Sulfate	65.45	64.82	1	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: The Boeing Company
Group Number: 1650615
Reported: 04/22/2016 22:59

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8021B BTEX Water
Batch number: 16107A94A

	Trifluorotoluene-P	Trifluorotoluene-F
8333214	85	79
8333216	86	79
8333218	85	79
8333220	84	79
8333230	86	100
Blank	85	79
LCS	85	95
LCSD		95
MS	84	
MSD	85	
Limits:	51-120	63-135

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Boeing Chain of Custody

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Acct. # 13419 For Eurofins Lancaster Laboratories use only Group # 1650615 Sample # 8333214-30
Please print. Instructions on reverse side correspond.

1 Client Information

#13419
Site Location: BOEING
Site Project: DEV. CTR.
Site Program/#: AOC-5 63rd EVENT
Boeing PM: JAMES BET
Consultant Contact: LANDAU
Report To: LANDAU
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: CHARLES HARDY # of Coolers:

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: 26 NW TPH-Gx	26 BETX	SULFATE	NITRATE NITRITE	5 Remarks/Comments: Fe+2
BDC-101-160413	4-13-2016	615	Aq	6	X	X	X		Ø
BDC-102-160413	4-13-2016	650	Aq	6	X	X	X		1.0 mg/L
BDC-103-160413	4-13-2016	725	Aq	6	X	X	X		Ø
BDC-104-160413	4-13-2016	755	Aq	6	X	X	X		Ø
BDC-05-04-160413	4-13-2016	825	Aq	2			X		1.0 mg/L
DC-MW-21A-160413	4-13-2016	855	Aq	2			X		Ø
DC-MW-18A-160413	4-13-2016	925	Aq	2			X		Ø
DC-MW-17A-160413	4-13-2016	950	Aq	2			X		1.8 mg/L
—									
TRIP BLANKS	B-1 3-22	—	Aq	2	X	X			

RUSH OR SHORT HOLD TIME ENCLOSED

6 Turnaround Time Requested (please circle)

(Standard)	5 day	4 day
72 hour	48 hour	24 hour

Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	4-13-2016 1130	[signature]	
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 4/14/16 0830

Relinquished by commercial carrier (circle): UPS FedEx Other: LIT COURIER
Temperature upon Receipt: 0-5 °C
Custody Seals Intact?: (Yes) No

7

Eurofins Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300
The white copy should accompany samples to Eurofins Lancaster Laboratories. The yellow copy should be retained by the client.

Issued by Dept. 40 Management
7063.02

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Sample Administration Receipt Documentation Log

Doc Log ID: 142817

Group Number(s): 1650615

Client: Boeing

Delivery and Receipt Information

Delivery Method:	SeaTac	Arrival Timestamp:	04/14/2016 9:30
Number of Packages:	3	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	14
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Krista Abel (3058) at 12:02 on 04/14/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	0.8	DT	Wet	Y	Bagged	N
2	DT146	0.5	DT	Wet	Y	Bagged	N
3	DT146	0.6	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T : 717-656-2300
F : 717-656-2681
www.LancasterLabs.com

1650615

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PA-US
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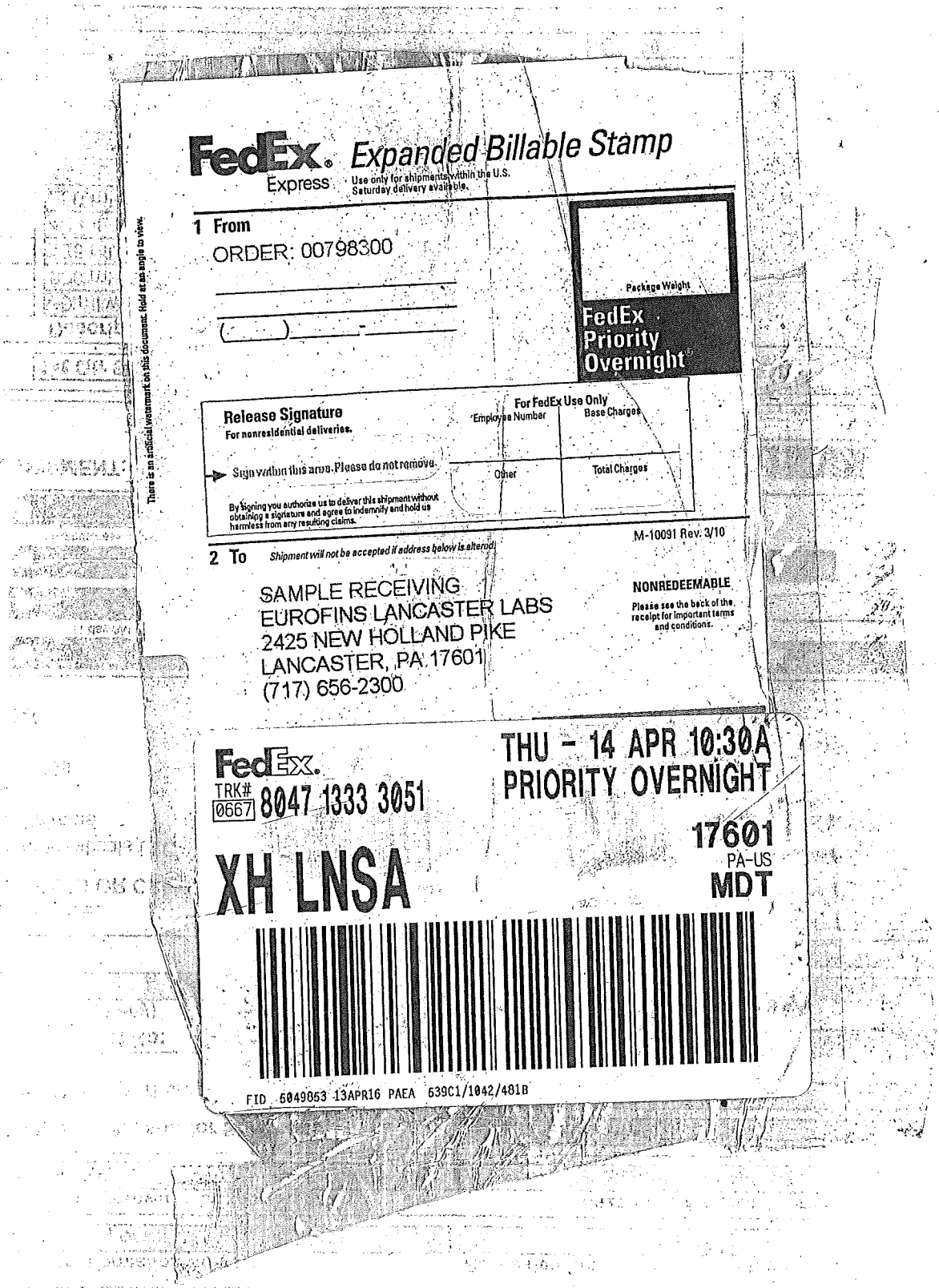
FID 5049053 13APR16 PAEA 539C1/1042/481B

16 50615



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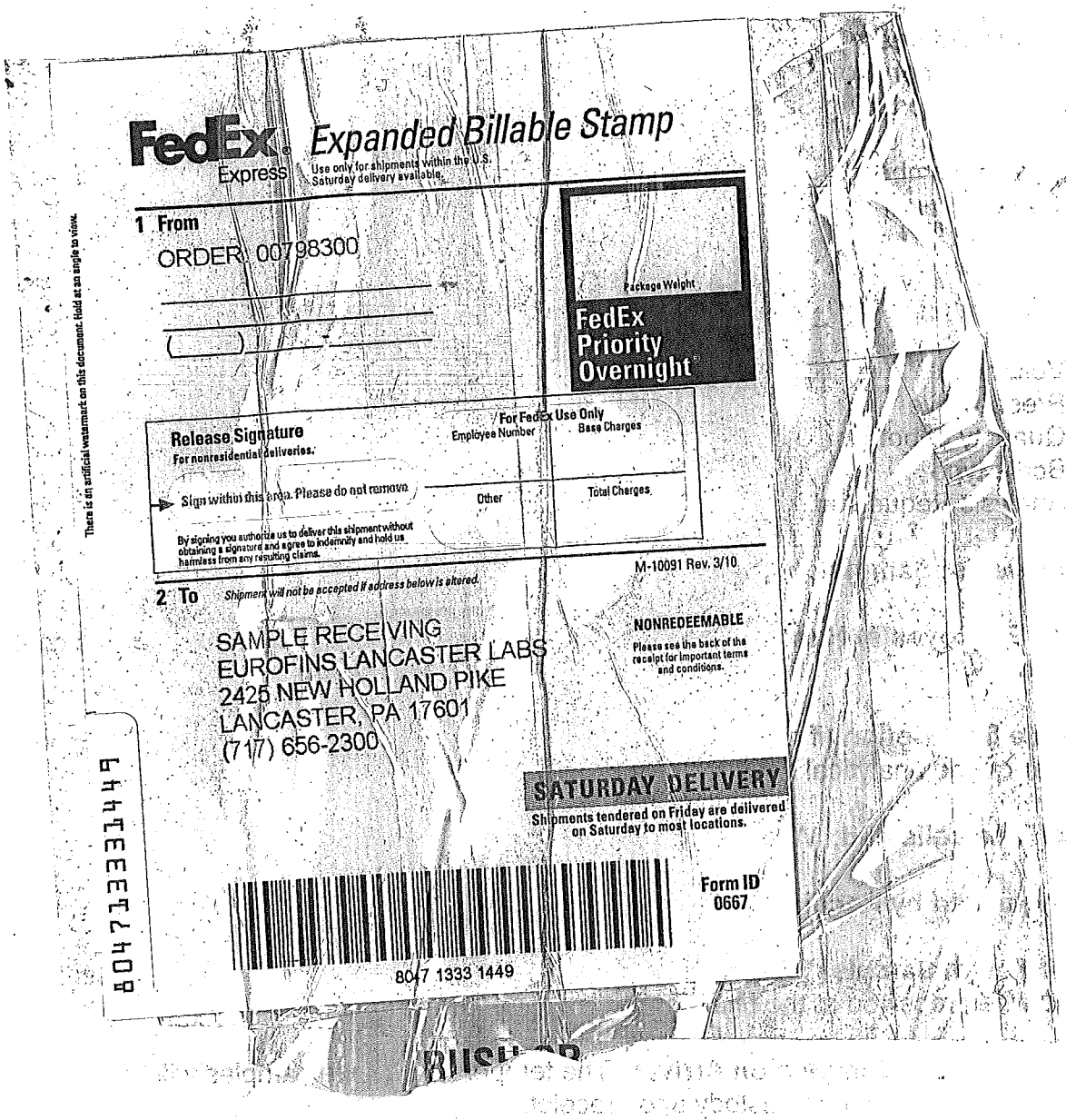
1650615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By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.
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LANCASTER, PA 17601
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Please see the back of the receipt for important terms and conditions.
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Shipments tendered on Friday are delivered on Saturday to most locations.
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.