

July 16, 2018

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

**Re: May 2018 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, which covers the period following the November 2017 semiannual sampling event through the semiannual event in May 2018, provides a brief summary of the data and remedial activities performed at the site during the reporting period. Remedial actions are underway in Solid Waste Management Unit (SWMU)-20 and SWMU-17, and Area of Concern (AOC)-05. All other SWMUs and AOCs identified in the 1994 Resource Conservation and Recovery Act (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. In addition, stormwater/storm drain source control investigations and stormwater data for the Industrial Stormwater General Permit are not included in this report.

Groundwater monitoring during the reporting period was performed in February in AOC-05 and in May 2018 at wells in AOC-05, SWMU-20, and SWMU-17. 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 compound (VOC) concentration 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 and 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), BTEX, and nitrate. Summary tables include proposed cleanup levels (CULs) from the May 7, 2013 *Proposed Cleanup Standards and Comparison to Site Data* document. Figures and tables are numbered discretely by area in the attached enclosures

SWMU-20

At SWMU-20, May 2018 groundwater monitoring results indicate concentrations of tetrachloroethene (PCE), trichloroethene (TCE), and breakdown products were below the proposed CULs at all SWMU-20 monitoring wells, excluding vinyl chloride at non-source well MW-17A (discussed below). *In situ* anaerobic bioremediation was enhanced by the October/November 2015 electron donor injection

event to wells located on the fringes of the TCE source zone; the core of the TCE source zone was treated by prior bioremediation injections. VOCs were 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). TOC concentrations continue to remain substantially elevated at these three wells, as was observed in May and November 2017. The sulfate-reducing to methanogenic aquifer redox conditions, which have largely persisted in SWMU-20 following initial source zone injections, continued during this reporting period.

At all source zone wells sampled semiannually (MW-6A, MW-6B, MW-9A, and MW-22A), PCE and TCE remain below reporting limits; cis-1,2-dichloroethene (cDCE) was also below its reporting limit; however, reporting limits were elevated due to sample foaming at the time of analysis. Vinyl chloride (VC) detections were less than or equal to 2.23 micrograms per liter ($\mu\text{g/L}$), which is below the proposed CUL (2.4 $\mu\text{g/L}$). Of the four source area wells monitored, ethane was detected in MW-9A

At each of the 10 non-source zone wells sampled semiannually, one or more VOCs including PCE, TCE, cDCE, and/or VC were detected in May 2018, excluding wells MW-15C, MW-16A, and MW-16C. However, with the exception of VC in MW-17A, all detections were below proposed CULs. VC was detected in MW-17A at 2.82 $\mu\text{g/L}$, which is above the CUL (2.4 $\mu\text{g/L}$). Semiannual monitoring will continue at SWMU-20 to evaluate continued treatment, per the Washington State Department of Ecology-approved monitoring reduction program that was implemented beginning with the April 2015 sampling event.

SWMU-17

At SWMU-17, monitoring results from May 2018 show that *in situ* anaerobic bioremediation continues to be enhanced following the focused electron donor injection performed in November 2017.

In May 2018, PCE, TCE, cDCE, and VC concentrations were below proposed CULs at all wells, except for TCE at well BDC-05-02 and VC at two wells (BDC-05-09 and BDC-05-18). In BDC-05-02 TCE was detected at a concentration of 3.75 $\mu\text{g/L}$ compared to the proposed CUL (1.4 $\mu\text{g/L}$). In BDC-05-09 and BDC-05-18, VC was detected at a concentrations of 3.32 $\mu\text{g/L}$ and 3.42 $\mu\text{g/L}$, respectively, compared to the proposed CUL (2.4 $\mu\text{g/L}$). Ethene and ethane were not detected in any wells during the May 2018 sampling event. TOC increased substantially at the five wells injected in November 2017 (626.6 to 9,629 milligrams per liter [mg/L]). TOC increases were also observed at six other wells (BDC-05-09, BDC-05-11, BDC-05-12, BDC-05-18, BDC-05-19, BDC-05-24) with concentrations ranging from 10.9 to 40.8 mg/L. Low sulfate and elevated concentrations of methane persisted at most wells, indicating a continuation of the highly reduced aquifer redox conditions required for complete dechlorination. Semiannual monitoring will continue for evaluation of treatment progress.

AOC-5

In February and May 2018 at AOC-5, TPH-G and BTEX concentrations remained below the laboratory detection limits at previously impacted wells BDC-103 and BDC-104 and downgradient wells BDC-101 and BDC-102. TPH-G and BTEX concentrations at BDC-103 were above their proposed CULs in 2016, but have been below the CULs since February 2017. The most recent nitrate injection was completed in December 2016 at BDC-103 for continued biotreatment.

In the previous sampling event in February 2018, nitrate concentrations were below the 10 mg/L action level at wells BDC-101, BDC-102, and BDC-104 and above the action level in well, BDC-103. In May 2018, nitrate concentrations were below the 10 mg/L action level at well BDC-104 and above the action level at BDC-101, BDC-102, and BDC-103. Nitrate monitoring was also performed in May at three wells located farther downgradient (MW-17A, MW-18A, and MW-21A) and was not detected. BDC-05-04, which is part of SWMU-17 and considered a downgradient well for AOC-5, was not sampled for nitrate in May 2018, but will be sampled in future semiannual (May/November) sampling events.

Groundwater sampling at AOC-05 wells will continue on a quarterly basis to evaluate treatment progress. 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 the undersigned if you have any questions or if you would like to discuss any of the sampling results in more detail.

LANDAU ASSOCIATES, INC.



Kenneth J. Reid, LEG
Senior Geologist



Clinton L. Jacob, PE, LG
Principal Engineer

KJR/CLJ/ljl

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Enclosures: Developmental Center Groundwater Monitoring – February/May 2018
SWMU-20 Data Tables, Maps, and Trend Charts
SWMU-17 Data Tables and Map
AOC-05 Data Table, Trend Charts, and Map
Facility-Wide Groundwater Elevation Contours and Groundwater Elevation Table
Groundwater Sample Collection Forms and Analytical Data (DVD)

cc: Carl Bach, Boeing EHS Remediation (elec. w/o data)
Lindsey Mahrt, Boeing EHS Remediation (elec. w/o data)
Mark Adams, Ecology (elec. w/o data)
Wade Wheeler, Boeing Defense and Space, EHS Manager (elec. w/o data)

***Developmental Center
Groundwater Monitoring
February/May 2018***

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Groundwater Monitoring
February/May 2018

SWMU-20

- Table 1. VOA/Conventionals Data
- Table 2. Analytical Results Summary—Tetrachloroethene (January 1994 through Present)
- Table 3. Analytical Results Summary—Trichloroethene (January 1994 through Present)
- Table 4. Analytical Results Summary—cis-1,2-Dichloroethene (January 1994 through Present)
- Table 5. Analytical Results Summary—Vinyl Chloride (January 1994 through Present)
- Table 6. Analytical Results Summary—Benzene (January 1994 through Present)
- Table 7. Analytical Results Summary—Naphthalene (January 1994 through Present)
- Table 8. Cleanup Action Summary—Source Zone
- Table 9. Cleanup Action Summary—Non-Source Zone

- Figure 1. Tetrachloroethene May 2018 Groundwater Concentrations
- Figure 2. Trichloroethene May 2018 Groundwater Concentrations
- Figure 3. cis-1,2-Dichloroethene May 2018 Groundwater Concentrations
- Figure 4. Vinyl Chloride May 2018 Groundwater Concentrations
- Figure 5. Tetrachloroethene Concentrations Trend Chart (January 1994 through Present)
- Figure 6. Trichloroethene Concentrations Trend Chart (January 1994 through Present)
- Figure 7. cis-1,2-Dichloroethene Concentrations Trend Chart (January 1994 through Present)
- Figure 8. Vinyl Chloride Concentrations Trend Chart (January 1994 through Present)
- Figure 9. Benzene Concentrations Trend Chart (January 1994 through Present)

Table 1
SWMU-20 VOA/Conventionals Data
Developmental Center Groundwater Monitoring
May 2018

Sample Name:	DC-MW-6A	DC-MW-6B	DC-MW-9A	MW-9A-Dup	DC-MW-10C	DC-MW-11A	DC-MW-13A	DC-MW-13C	DC-MW-14C	DC-MW-15C	DC-MW-16A	DC-MW-16C	DC-MW-17A	DC-MW-20C	DC-MW-22A	TRIP BLANK	TRIP BLANK
Lab SDG:	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0037	18E0031	18E0037
Lab Sample ID:	18E0037-04	18E0037-03	18E0037-12	18E0037-05	18E0037-10	18E0037-11	18E0037-01	18E0037-02	18E0037-07	18E0037-08	18E0037-14	18E0037-13	18E0031-06	18E0037-09	18E0037-06	18E0031-09	18E0037-15
Sample Date:	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018	5/1/2018
Test ID: VOA SW8260C (µg/L)																	
cis-1,2-Dichloroethene	2.00 U	2.00 U	0.20 U	0.20 U	0.55	11.8	0.20 U	0.20 U	0.22	2.00 U	2.00 U	0.20 U	2.0 U	1.09	2.00 U	0.20 U	0.20 U
Tetrachloroethene	2.00 U	2.00 U	0.20 U	0.20 U	0.20 U	0.26	1.45	0.20 U	0.20 U	2.00 U	2.00 U	0.20 U	2.0 U	0.20 U	2.00 U	0.20 U	0.20 U
Trichloroethene	2.00 U	2.00 U	0.20 U	0.20 U	0.20 U	0.26	0.43	0.20 U	0.20 U	2.00 U	2.00 U	0.20 U	2.0 U	0.20 U	2.00 U	0.20 U	0.20 U
Vinyl Chloride	2.00 U	2.00 U	2.23 J	1.28 J	0.39	0.35	0.20 U	0.25	0.20 U	2.00 U	2.00 U	0.20 U	2.82	0.20 U	2.00 U	0.20 U	0.20 U
NATURAL ATTENUATION PARAMETERS																	
Method Modified RSK175 (µg/L)																	
Methane	6,130	5,370	14,900	15,300												18,800	
Ethane	1.23 U	1.23 U	575 J	815 J												1.23 UJ	
Ethene	1.14 U	1.14 U	3.54 J	8.03 J												1.14 UJ	
Conventional Parameters																	
Sulfate (mg/L) (EPA 300.0)	0.342	0.500 U	0.107	0.100									0.500 U		0.500 U		
Total Organic Carbon (mg/L) (SM5310C)	149.3	4,147	25.22	25.21											297.2		

µg/L = micrograms per liter
mg/L = milligrams per liter
EPA = US 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.

Table 8
SWMU-20 Cleanup Action Summary - Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		Notes
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Proposed Groundwater Cleanup Levels (d)						DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)	
							5.3 (µg/L)	1.4 (µg/L)	134 (µg/L)	2.4 (µg/L)	---	---								
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	<1.1	<1.2	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
06A (c)	11/1/2016	4520	4338		2990	356	<0.2	<0.2	0.5	0.7	<100	<100	0.35	-154.9	NM	0.47	20000	7.1	121	Opaque dark brown/amber color Turbid, dark brown/amber color, strong injection fluid odor, no sheen
06A (c)	5/2/2017	4702	4520		3172	538	<0.2	<0.2	0.3	0.4	<1.0	1.4	0.26	-151.5	NM	<0.30	18000	7.2	124	Cloudy, amber, injection fluid odor, no sheen (slight effervescence)
06A (c)	11/8/2017	4892	4710		3362	728	<0.2	<0.2	0.3	0.3	<1.0	3.4	0.41	-56.1	NM	16.1	13000	7.1	99.5	Slightly turbid, amber color, strong injection fluid odor, no sheen (effervescent)
06A (c)	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	0.15	-28.7	NM	0.342	6130	7.2	149.3	---

Table 8
SWMU-20 Cleanup Action Summary - Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		Notes
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Proposed Groundwater Cleanup Levels (d)						DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)	
							5.3 (µg/L)	1.4 (µg/L)	134 (µg/L)	2.4 (µg/L)	---	---								
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	---
06B	11/25/2008	1622	1440		92		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	2.53	-68	2.4	0.2	18400	6.6	19.6	---
06B	05/20/2009	1798	1616		268		<1.0	<1.0	<1.0	<1.0	<1.1	<1.2	0.33	-36	4.0	<0.5	25300	6.9	20.9	---
06B	11/19/2009	1981	1799		451		<1.0	<1.0	<1.0	<1.0	<1.1	6.7	1.01	10	2.8	0.1	22500	6.9	20.0	---
06B	5/24/2010	2167	1985		637		<1.0	<1.0	<1.0	4.2	<1.1	1.6	3.05	417	2.0	3.0	7110	7.0	19.1	---
06B	11/11/2010	2338	2156		808		<1.0	<1.0	<1.0	5.4	<1.1	1.4	3.40	112	2.0	8.6	4600	7.1	15.8	---
06B	5/4/2011	2512	2330		982		<1.0	<1.0	<1.0	5.2	<1.1	<1.2	2.55	57	2.2	19.7	2120	7.1	12.6	---
06B	11/13/2011	2705	2523		1175		<0.2	<0.2	<0.2	0.8	<1.1	<1.2	6.10	-34	1.5	0.3	2260	7.3	14.8	---
06B	5/15/2012	2889	2707		1359		<0.2	<0.2	0.5	6.0	<1.0	1.3	0.14	71	1.8	10.9	2200	6.6	11.4	---
06B	11/14/2012	3072	2890		1542		<0.2	<0.2	<0.2	3.7	<1.0	1.8	0.02	10	2.0	7.0	2300	6.8	13.7	---
06B	5/21/2013	3260	3078		1730		<0.5	<0.5	<0.5	4.3	<1.0	<1.0	0.17	-427	2.5	20.1	720	7.7	11.0	---
06B	11/12/2013	3435	3253		1905		<0.2	<0.2	<0.2	2.5	<1.0	<1.0	2.62	-309	1.5	4.0	350	7.0	15.5	---
06B	5/7/2014	3611	3429		2081		<0.2	<0.2	<0.2	2.4	<1.0	<1.0	3.50	-320	1.6	2.8	1200	7.1	10.2	---
06B	11/5/2014	3793	3611		2263		<0.2	<0.2	<0.2	1.8	<1.0	<1.0	0.30	-54	1.7	4.7	2200	6.8	6.9	---
06B	4/29/2015	3968	3786		2438		<0.2	<0.2	<0.2	1.8	<1.0	<1.0	0.52	-39	1.0	0.99	1300	6.6	4.0	---
06B	10/26/2015	4148	3966		2618	-16	<0.2	<0.2	<0.2	1.0	<1.0	<1.0	0.99	-39	1.0	2.0	1900	6.6	4.9	---
06B	4/19/2016	4324	4142		2794	160	<2.0	<2.0	<2.0	2.0	<100	<100	0.06	-78	NM	0.3	17000	6.8	306	---
06B	11/1/2016	4520	4338		2990	356	<0.2	<0.2	0.5	0.2	<100	<100	0.32	-148.5	NM	0.71	23000	7.24	274	Opaque dark brown/black color Turbid, dark brown/black color, strong injection fluid odor, no sheen
06B	5/2/2017	4702	4520		3172	538	<0.2	<0.2	<0.2	0.3	<1.0	<1.0	0.17	-129.6	NM	1.3	21000	7.38	149	---
06B	11/8/2017	4892	4710		3362	728	<0.2	<0.2	<0.2	0.6	<1.0	2.4	0.10	-45.5	NM	<30.0	18000	6.88	320	Turbid, black, strong injection fluid odor
06B	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	1.05	14.0	NM	<0.5	5370	6.71	4147	Very turbid, black, no odor, no sheen
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	---

Table 8
SWMU-20 Cleanup Action Summary - Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		Notes
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Proposed Groundwater Cleanup Levels (d)						DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)	
							5.3 (µg/L)	1.4 (µg/L)	134 (µg/L)	2.4 (µg/L)	---	---								
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	---
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	---
09A	11/1/2016	4520	4338		2990	356	<0.2	<0.2	<0.2	<0.2	<1.0	120	0.73	-89	NM	<0.30	19000	6.46	17.5	Slight yellow/greenish tint
09A	5/2/2017	4702	4520		3172	538	<0.2	<0.2	<0.2	<0.2	<1.0	430	1.03	-118.2	NM	<0.30	20000	6.58	22.3	Clear, yellow tint, injection fluid odor, no sheen

Table 8
SWMU-20 Cleanup Action Summary - Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		Notes
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Proposed Groundwater Cleanup Levels (d)						DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)	
							5.3 (µg/L)	1.4 (µg/L)	134 (µg/L)	2.4 (µg/L)	---	---								
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 electroic 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	---
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	7.0	<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	---

Table 8
SWMU-20 Cleanup Action Summary - Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		Notes
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Proposed Groundwater Cleanup Levels (d)						DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)	
							5.3 (µg/L)	1.4 (µg/L)	134 (µg/L)	2.4 (µg/L)	---	---								
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		<1.0	<1.0	<1.0	<1.0	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
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

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SWMU-20 Cleanup Action Summary - Source Zone
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Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		Notes
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	Proposed Groundwater Cleanup Levels (d)						DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)	
							5.3 (µg/L)	1.4 (µg/L)	134 (µg/L)	2.4 (µg/L)	---	---								
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	---
22A	11/2/2016	4521	4339	4248	2991	357	<0.2	<0.2	0.5	<0.2	<100	<100	0.37	-252.6	NM	<0.30	18000	7.34	542	Clear dark brown/amber color
22A	5/2/2017	4702	4520	4429	3172	538	<0.2	<0.2	0.4	0.3	<1.0	<1.0	0.41	-206.8	NM	<0.30	18000	7.24	300	Clear, dark brown/amber color, injection fluid odor, no sheen, very effervescent
22A	11/8/2017	4892	4710	4619	3362	728	<0.2	<0.2	0.6	0.3	<1.0	1.8	0.32	-17.5	NM	<15.0	17000	7.10	277	Clear, dark amber tint, injection fluid odor, no sheen (slight effervescence)
22A	5/1/2018	5066	4884	4793	3536	902	<2.0	<2.0	<2.0	<2.0	<1.14	<1.23	0.08	-94.7	NM	<0.5	18800	7.12	297.2	Turbid, amber color, strong injection fluid odor, no sheen (very effervescent)
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	---
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	---

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Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds						Aquifer Redox Conditions					Donor Parameters		Notes
							Proposed Groundwater Cleanup Levels (d)						DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	pH	TOC (mg/L)	
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)	--- Ethene (µg/L)	--- Ethane (µg/L)								
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 = detected compound

µg/L = micrograms per liter

mg/L = milligrams per liter

mV = millivolts

NA = not analyzed

Box = exceedance of proposed cleanup level

(a) Injections occurred on:

-6/17/04 (6A, B, C; 9A, B, C)

-12/16-17/04 (6A, 6B;9A,9B)

-3/17/05 (14A)

-8/25-28/08 (6A, 9A, 10A)

-10/27-11/11/15 (6A, 6B, 10C, 15C, 16A, 16C, 17A, 20C, 22A)

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

(c) MW-06A installed June 2004.

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

Table 9
SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	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
MW-10C	11/1/2016	4520	4338		2990	356	<0.2	<0.2	0.5	<0.2
MW-10C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	0.4	0.2

Table 9
SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
MW-10C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	0.5	0.2
MW-10C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	0.55	0.39
MW-11A	5/2/2004	-46					<1.0	2.1	21	<1.0
MW-11A	10/25/2004	130	-52				<1.0	2.0	20	<1.0
MW-11A	5/12/2005	329	147				<1.0	2.0	20	<1.0
MW-11A	11/15/2005	516	334				<1.0	2.0	22	<1.0
MW-11A	5/16/2006	698	516				<1.0	1.1	20	<1.0
MW-11A	11/26/2006	892	710				<1.0	1.5	24	<1.0
MW-11A	5/22/2007	1069	887				<1.0	1.5	26	<1.0
MW-11A	11/27/2007	1258	1076				<1.0	1.1	27	<1.0
MW-11A	5/19/2008	1432	1250		-98		<0.2	1.2	26	0.2
MW-11A	11/23/2008	1620	1438		90		<1.0	1.2	33	<1.0
MW-11A	05/18/2009	1796	1614		266		<1.0	<1.0	26	<1.0
MW-11A	11/17/2009	1979	1797		449		<1.0	1.0	30	<1.0
MW-11A	5/19/2010	2162	1980		632		<1.0	1.1	26	<1.0
MW-11A	11/8/2010	2335	2153		805		<1.0	<1.0	22	<1.0
MW-11A	5/3/2011	2511	2329		981		<1.0	<1.0	22	<1.0
MW-11A	11/13/2011	2705	2523		1175		<0.2	0.5	23	0.4
MW-11A	5/14/2012	2888	2706		1358		<0.2	0.7	24	0.4
MW-11A	11/14/2012	3072	2890		1542		<2.0	<2.0	25	<2.0
MW-11A	5/21/2013	3260	3078		1730		<2.0	<2.0	22	<2.0
MW-11A	11/12/2013	3435	3253		1905		<2.0	<2.0	24	<2.0
MW-11A	5/7/2014	3611	3429		2081		<2.0	<2.0	19	<2.0
MW-11A	11/4/2014	3792	3610		2262		<0.2	0.4	24	0.4
MW-11A	4/28/2015	3967	3785		2437		<0.2	0.5	21	0.3
MW-11A	10/26/2015	4148	3966		2618	-16	0.2	0.2	19	0.4
MW-11A	4/19/2016	4324	4142		2794	160	<0.2	0.3	20	0.4
MW-11A	11/1/2016	4520	4338		2990	356	<0.2	<0.2	15	0.5
MW-11A	5/2/2017	4702	4520		3172	538	<0.2	0.4	18	0.6
MW-11A	11/8/2017	4892	4710		3362	728	<0.2	0.2	21	0.5
MW-11A	5/1/2018	5066	4884		3536	902	0.26	0.26	11.8	0.35
MW-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

Table 9
SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
MW-12A	5/7/2014	3611	3429		2081		0.3	<0.2	<0.2	<0.2
MW-12A	11/4/2014	3792	3610		2262		0.3	<0.2	0.3	<0.2
MW-13A	5/2/2004	-46					5.1	4.6	<1.0	<1.0
MW-13A	10/25/2004	130	-52				4.3	4.0	<1.0	<1.0
MW-13A	5/12/2005	329	147				6.1	4.6	<1.0	<1.0
MW-13A	11/14/2005	515	333				6.0	4.5	<1.0	<1.0
MW-13A	5/16/2006	698	516				7.1	4.6	<1.0	<1.0
MW-13A	11/27/2006	893	711				8.3	6.5	0.3	<0.2
MW-13A	5/21/2007	1068	886				8.2	7.0	0.4	<0.2
MW-13A	11/28/2007	1259	1077				6.4	4.2	<1.0	<1.0
MW-13A	5/19/2008	1432	1250		-98		8.7	6.8	0.3	<0.2
MW-13A	11/23/2008	1620	1438		90		6.5	3.7	<1.0	<1.0
MW-13A	05/18/2009	1796	1614		266		7.7	5.6	<1.0	<1.0
MW-13A	11/17/2009	1979	1797		449		9.2	6.0	<1.0	<1.0
MW-13A	5/20/2010	2163	1981		633		9.4	5.3	<1.0	<1.0
MW-13A	11/10/2010	2337	2155		807		3.6	2.8	<1.0	<1.0
MW-13A	5/4/2011	2512	2330		982		3.9	2.4	<1.0	<1.0
MW-13A	11/3/2011	2695	2513		1165		1.6	<1.0	<1.0	<1.0
MW-13A	5/14/2012	2888	2706		1358		2.3	0.8	<0.2	<0.2
MW-13A	11/13/2012	3071	2889		1541		2.2	0.8	<0.2	<0.2
MW-13A	5/21/2013	3260	3078		3078		4.5	2.5	0.5	<0.2
MW-13A	11/12/2013	3435	3253		3253		2.2	0.6	<0.2	<0.2
MW-13A	5/7/2014	3611	3429		3429		3.1	1.3	<0.2	<0.2
MW-13A	11/4/2014	3792	3610		3610		2.3	0.5	<0.2	<0.2
MW-13A	4/28/2015	3967	3785		3785		1.8	0.4	<0.2	<0.2
MW-13A	10/27/2015	4149	3967		3967	-15	1.5	0.3	<0.2	<0.2
MW-13A	4/19/2016	4324	4142		4142	160	1.6	0.3	<0.2	<0.2
MW-13A	11/1/2016	4520	4338		4338	356	2.3	0.7	<0.2	<0.2
MW-13A	5/2/2017	4702	4520		4520	538	1.1	<0.2	<0.2	<0.2
MW-13A	11/8/2017	4892	4710		4710	728	1.6	0.3	<0.2	<0.2
MW-13A	5/1/2018	5066	4884		4884	902	1.45	0.43	<0.2	<0.2
MW-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

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SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
MW-13C	5/7/2014	3611	3429		2081		<1.0	<1.0	<1.0	<1.0
MW-13C	11/4/2014	3792	3610		2262		<0.2	<0.2	<0.2	0.2
MW-13C	4/28/2015	3967	3785		2437		<0.2	<0.2	<0.2	0.3
MW-13C	10/27/2015	4149	3967		2619	-15	<0.2	<0.2	<0.2	0.2
MW-13C	4/19/2016	4324	4142		2794	160	<0.2	<0.2	<0.2	0.3
MW-13C	11/1/2016	4520	4338		2990	356	<0.2	<0.2	<0.2	0.2
MW-13C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	<0.2	0.3
MW-13C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	<0.2	0.3
MW-13C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	<0.2	0.25
MW-14C	5/4/2004	-44					<1.0	<1.0	63	44
MW-14C	10/26/2004	131	-51	-142			<1.0	<1.0	22	75
MW-14C	5/16/2005	333	151	60			<1.0	<1.0	11	6.1
MW-14C	11/15/2005	516	334	243			<1.0	<1.0	<1.0	1.8
MW-14C	5/17/2006	699	517	426			<1.0	<1.0	<1.0	<1.0
MW-14C	11/29/2006	895	713	622			<0.2	<0.2	<0.2	1.0
MW-14C	5/23/2007	1070	888	797			<1.0	<1.0	<1.0	2.5
MW-14C	12/3/2007	1264	1082	991			<1.0	<1.0	1.1	11
MW-14C	5/20/2008	1433	1251	1160	-97		<1.0	<1.0	1.4	22
MW-14C	11/24/2008	1621	1439	1348	91		<1.0	<1.0	<1.0	4.3
MW-14C	05/20/2009	1798	1616	1525	268		<1.0	<1.0	<1.0	1.1
MW-14C	11/17/2009	1979	1797	1706	449		<1.0	<1.0	<1.0	<1.0
MW-14C	5/24/2010	2167	1985	1894	637		<1.0	<1.0	<1.0	<1.0
MW-14C	11/10/2010	2337	2155	2064	807		<1.0	<1.0	<1.0	<1.0
MW-14C	5/5/2011	2513	2331	2240	983		<1.0	<1.0	<1.0	<1.0
MW-14C	11/13/2011	2705	2523	2432	1175		<0.2	<0.2	<0.2	<0.2
MW-14C	5/14/2012	2888	2706	2615	1358		<0.2	<0.2	<0.2	<0.2
MW-14C	11/14/2012	3072	2890	2799	1542		<2.0	<2.0	<2.0	<2.0
MW-14C	5/21/2013	3260	3078	2987	1730		<2.0	<2.0	<2.0	<2.0
MW-14C	11/12/2013	3435	3253	3162	1905		<2.0	<2.0	<2.0	<2.0
MW-14C	5/7/2014	3611	3429	3338	2081		<1.0	<1.0	<1.0	<1.0
MW-14C	11/5/2014	3793	3611	3520	2263		<0.2	<0.2	<0.2	<0.2
MW-14C	4/29/2015	3968	3786	3695	2438		<0.2	<0.2	<0.2	<0.2
MW-14C	10/27/2015	4149	3967	3876	2619	-15	<0.2	<0.2	<0.2	<0.2
MW-14C	4/19/2016	4324	4142	4051	2794	160	<0.2	<0.2	<0.2	0.3
MW-14C	11/2/2016	4521	4339	4248	2991	357	<0.2	<0.2	<0.2	<0.2
MW-14C	5/2/2017	4702	4520	4429	3172	538	<0.2	<0.2	<0.2	0.2
MW-14C	11/8/2017	4892	4710	4619	3362	728	<0.2	<0.2	0.2	0.2
MW-14C	5/1/2018	5066	4884	4793	3536	902	<0.2	<0.2	0.22	<0.2
MW-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

Table 9
SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
MW-15C	10/26/2004	131	-51				<1.0	<1.0	11	17
MW-15C	5/16/2005	333	151				<1.0	<1.0	13	6.4
MW-15C	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0
MW-15C	5/17/2006	699	517				<1.0	<1.0	<1.0	<1.0
MW-15C	11/29/2006	895	713				<0.2	<0.2	<0.2	<0.2
MW-15C	5/23/2007	1070	888				<1.0	<1.0	<1.0	2.2
MW-15C	12/3/2007	1264	1082				<1.0	<1.0	<1.0	2.5
MW-15C	5/20/2008	1433	1251		-97		<1.0	<1.0	1.8	6.6
MW-15C	11/24/2008	1621	1439		91		<1.0	<1.0	1.9	6.6
MW-15C	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0
MW-15C	11/18/2009	1980	1798		450		<1.0	<1.0	<1.0	<1.0
MW-15C	5/20/2010	2163	1981		633		<1.0	<1.0	<1.0	<1.0
MW-15C	11/10/2010	2337	2155		807		<1.0	<1.0	<1.0	<1.0
MW-15C	5/5/2011	2513	2331		983		<1.0	<1.0	<1.0	<1.0
MW-15C	11/13/2011	2705	2523		1175		<0.2	<0.2	<0.2	<0.2
MW-15C	5/14/2012	2888	2706		1358		<0.2	<0.2	<0.2	<0.2
MW-15C	11/13/2012	3071	2889		1541		<2.0	3.2	<2.0	<2.0
MW-15C	5/21/2013	3260	3078		1730		<5.0	<5.0	<5.0	<5.0
MW-15C	11/12/2013	3435	3253		1905		<2.0	<2.0	<2.0	2.3
MW-15C	5/7/2014	3611	3429		2081		<2.0	<2.0	<2.0	2.9
MW-15C	11/5/2014	3793	3611		2263		<0.2	<0.2	0.5	2.5
MW-15C	4/29/2015	3968	3786		2438		<0.2	<0.2	0.6	2.4
MW-15C	10/27/2015	4149	3967		2619	-15	<0.2	<0.2	0.5	2.0
MW-15C	4/19/2016	4324	4142		2794	160	<0.2	0.6	1.2	0.5
MW-15C	11/2/2016	4521	4339		2991	357	<0.2	0.3	1.7	0.7
MW-15C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	1.2	0.5
MW-15C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	1.3	0.4
MW-15C	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0
MW-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

Table 9
SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
MW-16A	11/16/2009	1978	1796		448		2.2	1.5	<1.0	<1.0
MW-16A	5/20/2010	2163	1981		633		1.4	1.4	<1.0	<1.0
MW-16A	11/10/2010	2337	2155		807		1.3	1.1	<1.0	<1.0
MW-16A	5/4/2011	2512	2330		982		1.6	1.4	<1.0	<1.0
MW-16A	11/13/2011	2705	2523		1175		1.4	1.3	0.5	<0.2
MW-16A	5/14/2012	2888	2706		1358		1.6	1.7	0.5	<0.2
MW-16A	11/14/2012	3072	2890		1542		1.1	1.5	0.6	<0.2
MW-16A	5/21/2013	3260	3078		1730		1.4	1.5	<0.5	<0.5
MW-16A	11/12/2013	3435	3253		1905		2.1	1.8	0.3	<0.2
MW-16A	5/8/2014	3612	3430		2082		1.4	1.6	0.4	<0.2
MW-16A	11/5/2014	3793	3611		2263		1.6	1.5	0.4	<0.2
MW-16A	4/28/2015	3967	3785		2437		1.4	1.4	0.3	<0.2
MW-16A	10/26/2015	4148	3966		2618	-16	1.5	1.5	0.3	<0.2
MW-16A	4/19/2016	4324	4142		2794	160	0.8	0.7	10	<0.2
MW-16A	11/2/2016	4521	4339		2991	357	0.6	0.3	14	0.5
MW-16A	5/2/2017	4702	4520		3172	538	0.7	0.2	5.7	3.1
MW-16A	11/8/2017	4892	4710		3362	728	<0.2	<0.2	0.7	0.7
MW-16A	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	<2.0
MW-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
MW-16C	5/20/2010	2163	1981		633		<1.0	<1.0	3.7	3.4
MW-16C	11/10/2010	2337	2155		807		<1.0	<1.0	3.3	2.8
MW-16C	5/4/2011	2512	2330		982		<1.0	<1.0	3.7	3.2
MW-16C	11/13/2011	2705	2523		1175		<0.2	<0.2	3.3	2.5
MW-16C	5/14/2012	2888	2706		1358		<0.2	<0.2	4.8	4.2
MW-16C	11/14/2012	3072	2890		1542		<0.2	<0.2	4.9	3.8
MW-16C	5/21/2013	3260	3078		1730		<0.5	<0.5	3.9	2.8
MW-16C	11/12/2013	3435	3253		1905		<0.2	<0.2	4.4	2.1
MW-16C	5/8/2014	3612	3430		2082		<0.2	<0.2	3.4	1.2
MW-16C	11/5/2014	3793	3611		2263		<0.2	<0.2	3.4	1.3
MW-16C	4/28/2015	3967	3785		2437		<0.2	<0.2	2.2	1.2
MW-16C	10/26/2015	4148	3966		2618	-16	<0.2	<0.2	2.7	1.1
MW-16C	4/19/2016	4324	4142		2794	160	<0.2	<0.2	0.9	0.3
MW-16C	11/2/2016	4521	4339		2991	357	<0.2	<0.2	1.9	0.3
MW-16C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	0.4	0.2
MW-16C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	0.7	0.4
MW-16C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	<0.2	<0.2
MW-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

Table 9
SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
MW-17A	11/27/2006	893	711				2.2	6.3	1.0	<0.2
MW-17A	5/21/2007	1068	886				4.7	5.3	1.0	<0.2
MW-17A	11/29/2007	1260	1078				4.2	4.3	<1.0	<1.0
MW-17A	5/19/2008	1432	1250		-98		4.3	5.1	0.8	<0.2
MW-17A	11/23/2008	1620	1438		90		4.2	5.2	1.2	<1.0
MW-17A	05/19/2009	1797	1615		267		3.2	4.9	1.4	<1.0
MW-17A	11/12/2009	1974	1792		444		3.7	4.5	1.1	<1.0
MW-17A	5/20/2010	2163	1981		633		4.0	3.1	<1.0	<1.0
MW-17A	11/8/2010	2335	2153		805		2.3	4.8	2.3	<1.0
MW-17A	5/3/2011	2511	2329		981		3.1	2.2	1.5	<1.0
MW-17A	11/3/2011	2695	2513		1165		2.6	2.8	1.0	<1.0
MW-17A	5/14/2012	2888	2706		1358		3.1	2.0	0.5	<0.2
MW-17A	11/13/2012	3071	2889		1541		2.8	3.5	0.9	<0.2
MW-17A	5/20/2013	3259	3077		1729		3.6	2.8	0.8	<0.2
MW-17A	11/4/2014	3792	3610		2262		3.9	3.4	1.0	<0.2
MW-17A	5/6/2014	3610	3428		2080		3.6	2.6	0.4	<0.2
MW-17A	11/4/2014	3792	3610		2262		2.9	3.1	0.9	<0.2
MW-17A	4/28/2015	3967	3785		2437		3.4	2.3	0.4	<0.2
MW-17A	10/26/2015	4148	3966		2618	-16	3.4	2.6	1.1	<0.2
MW-17A	4/19/2016	4324	4142		2794	160	<2.0	<2.0	8	<2.0
MW-17A	11/1/2016	4520	4338		2990	356	<2.0	0.4	8.2	0.8
MW-17A	5/3/2017	4703	4521		3173	539	<0.2	<0.2	0.8	2.2
MW-17A	11/7/2017	4891	4709		3361	727	<0.2	<0.2	1.3	5.9
MW-17A	5/1/2018	5066	4884		3536	902	<2.0	<2.0	<2.0	2.82
MW-18A	5/2/2004	-46	-228				<1.0	<1.0	<1.0	<1.0
MW-18C	5/2/2004	-46					<1.0	<1.0	<1.0	<1.0
MW-18C	10/25/2004	130	-52				<1.0	<1.0	<1.0	<1.0
MW-18C	5/12/2005	329	147				<1.0	<1.0	<1.0	<1.0
MW-18C	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0
MW-18C	5/17/2006	699	517				<1.0	<1.0	<1.0	<1.0
MW-18C	11/27/2006	893	711				<0.2	<0.2	<0.2	<0.2
MW-18C	5/21/2007	1068	886				<0.2	<0.2	<0.2	0.2
MW-18C	11/28/2007	1259	1077				<1.0	<1.0	<1.0	<1.0
MW-18C	5/19/2008	1432	1250		-98		<0.2	<0.2	<0.2	0.2
MW-18C	11/23/2008	1620	1438		90		<1.0	<1.0	<1.0	<1.0
MW-18C	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0
MW-18C	11/17/2009	1979	1797		449		<1.0	<1.0	<1.0	<1.0
MW-19C	5/2/2004	-46					<1.0	<1.0	<1.0	<1.0
MW-19C	10/25/2004	130	-52				<1.0	<1.0	<1.0	<1.0
MW-19C	5/12/2005	329	147				<1.0	<1.0	<1.0	<1.0
MW-19C	11/15/2005	516	334				<1.0	<1.0	<1.0	<1.0
MW-19C	5/17/2006	699	517				<1.0	<1.0	<1.0	<1.0
MW-19C	11/27/2006	893	711				<0.2	<0.2	0.3	<0.2
MW-19C	5/22/2007	1069	887				<1.0	<1.0	<1.0	<1.0
MW-19C	11/29/2007	1260	1078				<1.0	<1.0	<1.0	<1.0
MW-19C	5/20/2008	1433	1251		-97		<1.0	<1.0	<1.0	<1.0
MW-19C	11/23/2008	1620	1438		90		<1.0	<1.0	<1.0	<1.0
MW-19C	05/19/2009	1797	1615		267		<1.0	<1.0	<1.0	<1.0
MW-19C	11/18/2009	1980	1798		450		<1.0	<1.0	<1.0	<1.0
MW-20C	5/3/2004	-45					<1.0	<1.0	1.4	2.4

Table 9
SWMU-20 Cleanup Action Summary - Non-Source Zone
Developmental Center Groundwater Monitoring

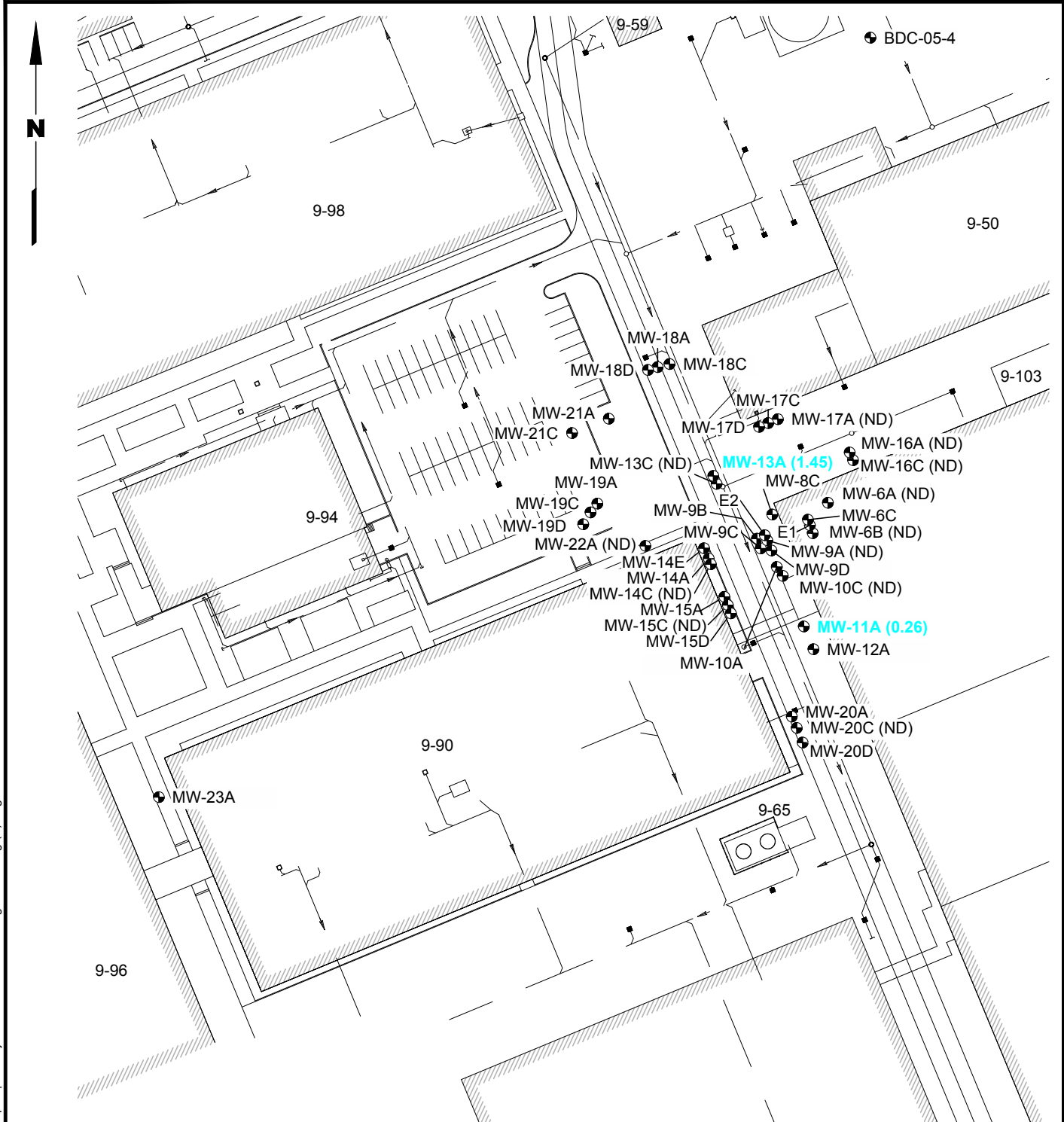
Well	Date	Elapsed Time from Injections (a) (days)					Volatile Organic Compounds			
							Proposed Groundwater Cleanup Levels (c)			
		1st Injection	2nd Injection	3rd (b) Injection	4th Injection	5th Injection	5.3 PCE (µg/L)	1.4 TCE (µg/L)	134 cDCE (µg/L)	2.4 VC (µg/L)
MW-20C	10/25/2004	130	-52				<1.0	<1.0	1.7	4.6
MW-20C	5/12/2005	329	147				<1.0	<1.0	1.7	2.3
MW-20C	11/15/2005	516	334				<1.0	<1.0	2.1	2.9
MW-20C	5/17/2006	699	517				<1.0	<1.0	1.8	1.6
MW-20C	11/29/2006	895	713				<0.2	0.2	2.1	1.5
MW-20C	5/21/2007	1068	886				<0.2	<0.2	1.6	1.8
MW-20C	11/29/2007	1260	1078				<1.0	<1.0	1.6	1.3
MW-20C	5/20/2008	1433	1251		-97		<1.0	<1.0	1.6	2.5
MW-20C	11/23/2008	1620	1438		90		<1.0	<1.0	1.5	2.7
MW-20C	05/19/2009	1797	1615		267		<1.0	<1.0	1.4	2.0
MW-20C	11/18/2009	1980	1798		450		<1.0	<1.0	1.7	2.3
MW-20C	5/20/2010	2163	1981		633		<1.0	<1.0	1.3	1.8
MW-20C	11/8/2010	2335	2153		805		<1.0	<1.0	1.4	1.4
MW-20C	5/4/2011	2512	2330		982		<1.0	<1.0	1.1	1.8
MW-20C	11/3/2011	2695	2513		1165		<1.0	<1.0	1.3	2.1
MW-20C	5/14/2012	2888	2706		1358		<0.2	<0.2	1.2	1.5
MW-20C	11/13/2012	3071	2889		1541		<2.0	<2.0	<2.0	<2.0
MW-20C	5/21/2013	3260	3078		1730		<5.0	<5.0	<5.0	<5.0
MW-20C	11/12/2013	3435	3253		1905		<2.0	<2.0	<2.0	<2.0
MW-20C	5/7/2014	3611	3429		2081		<2.0	<2.0	<2.0	<2.0
MW-20C	11/5/2014	3793	3611		2263		<0.2	<0.2	0.9	0.7
MW-20C	4/28/2015	3967	3785		2437		<0.2	<0.2	0.7	1.0
MW-20C	10/27/2015	4149	3967		2619	-15	<0.2	<0.2	1.0	0.9
MW-20C	4/19/2016	4324	4142		2794	160	<0.2	0.2	2.2	0.3
MW-20C	11/2/2016	4521	4339		2991	357	<0.2	0.2	0.6	0.5
MW-20C	5/2/2017	4702	4520		3172	538	<0.2	<0.2	1.5	0.4
MW-20C	11/8/2017	4892	4710		3362	728	<0.2	<0.2	1.5	0.5
MW-20C	5/1/2018	5066	4884		3536	902	<0.2	<0.2	1.09	<0.2

PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
VC = vinyl chloride
µg/L = micrograms per liter
Bold = detected compound
Box = Exceedance of proposed cleanup level

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

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

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

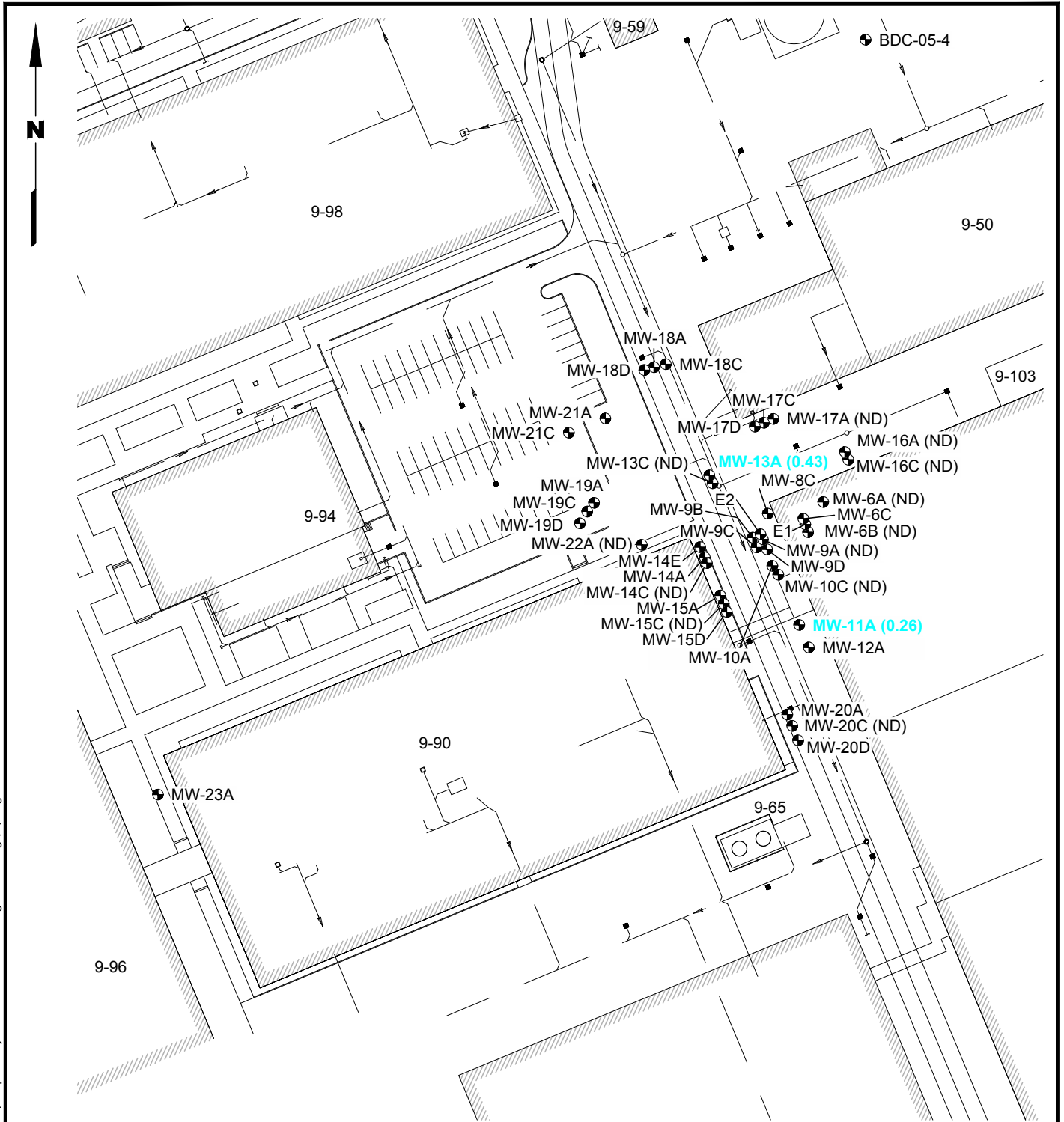


Legend


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

Boeing Developmental Center Tukwila, Washington	SWMU-20 Tetrachloroethene May 2018 Groundwater Concentrations	Figure 1
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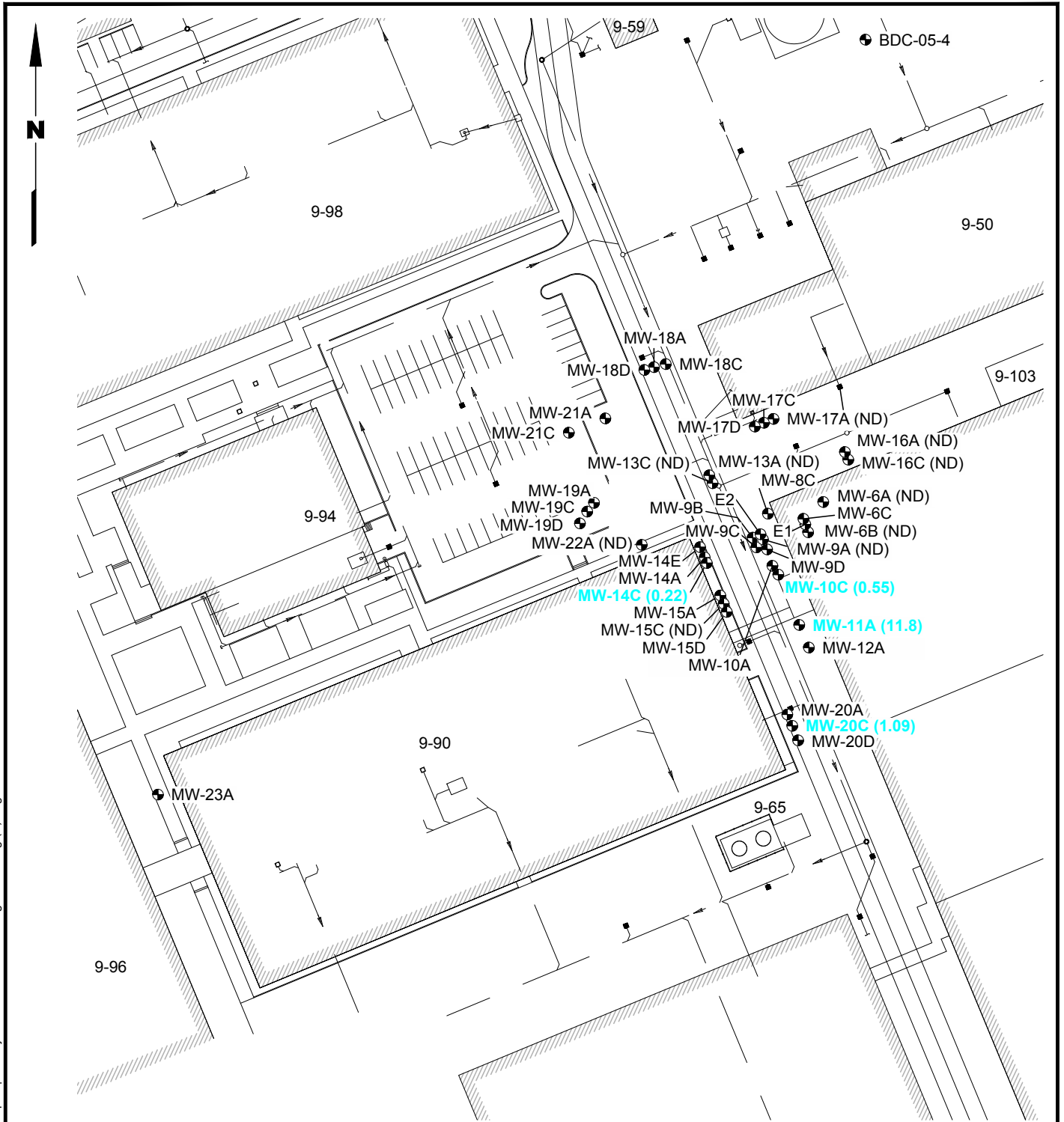


Legend

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



Boeing Developmental Center Tukwila, Washington	SWMU-20 Trichloroethene May 2018 Groundwater Concentrations	Figure 2
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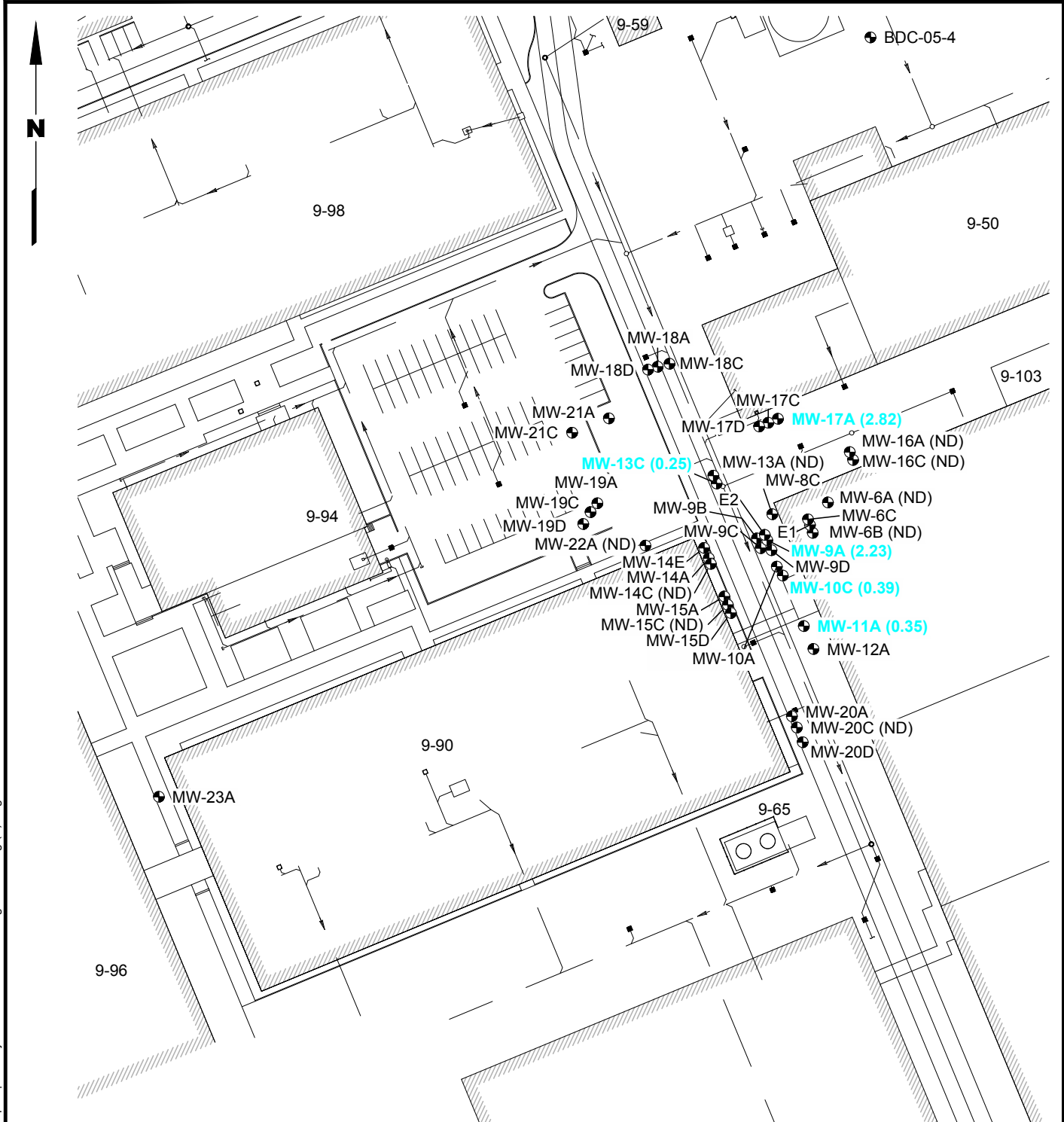


Legend

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



Boeing Developmental Center Tukwila, Washington	SWMU-20 Cis-1,2-Dichloroethene May 2018 Groundwater Concentrations	Figure 3
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Legend

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



Boeing Developmental Center Tukwila, Washington	SWMU-20 Vinyl Chloride May 2018 Groundwater Concentrations	Figure 4
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Figure 5
Developmental Center SWMU-20 Wells
Tetrachloroethene Concentrations Trend Chart
(Wells with PCE Historically Detected over 50 ppb)
January 1994 Through Present

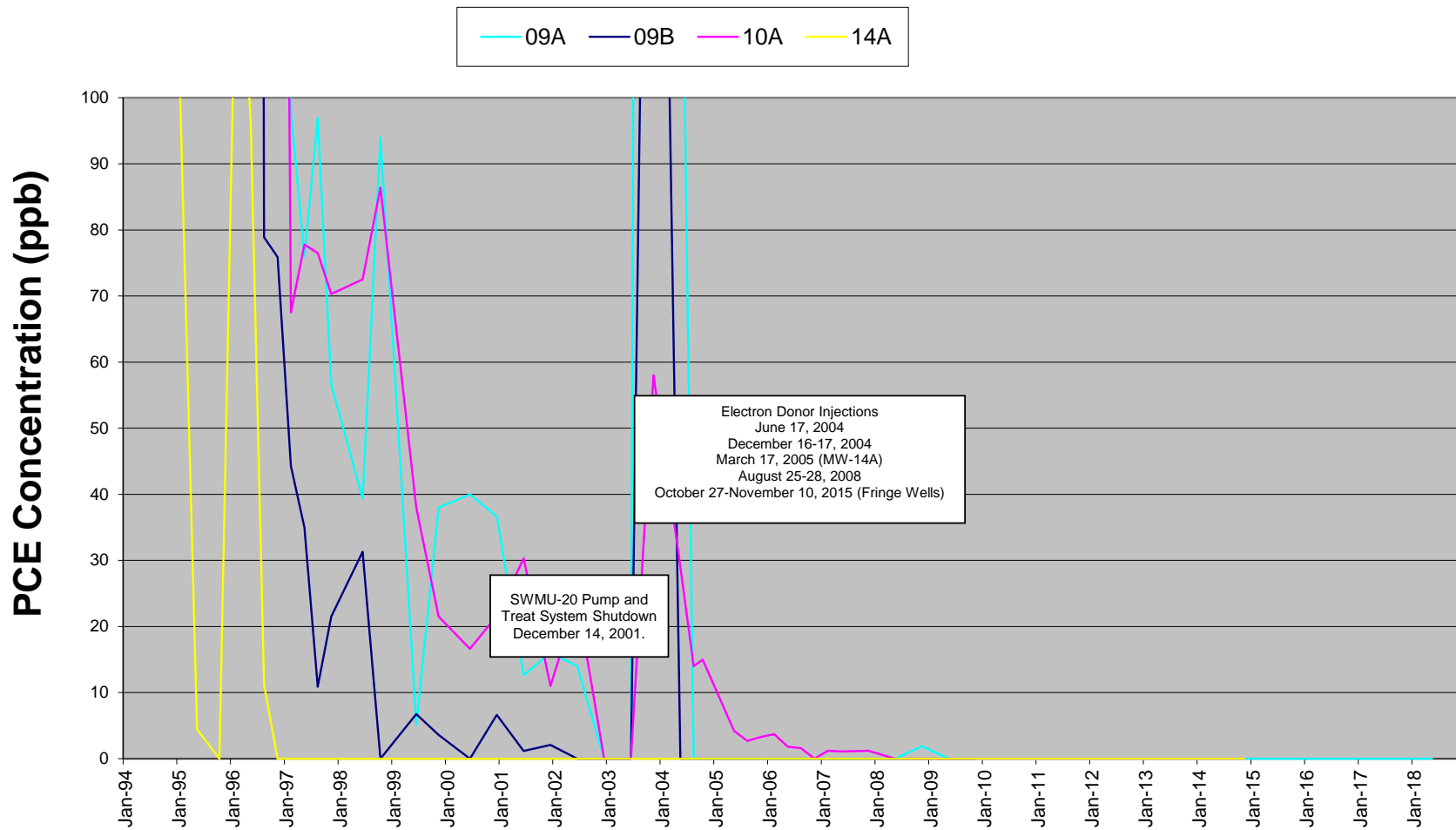


Figure 6
Developmental Center SWMU-20 Wells
Trichloroethene Concentrations Trend Chart
(Wells with TCE Historically Detected over 50 ppb)
January 1994 Through Present

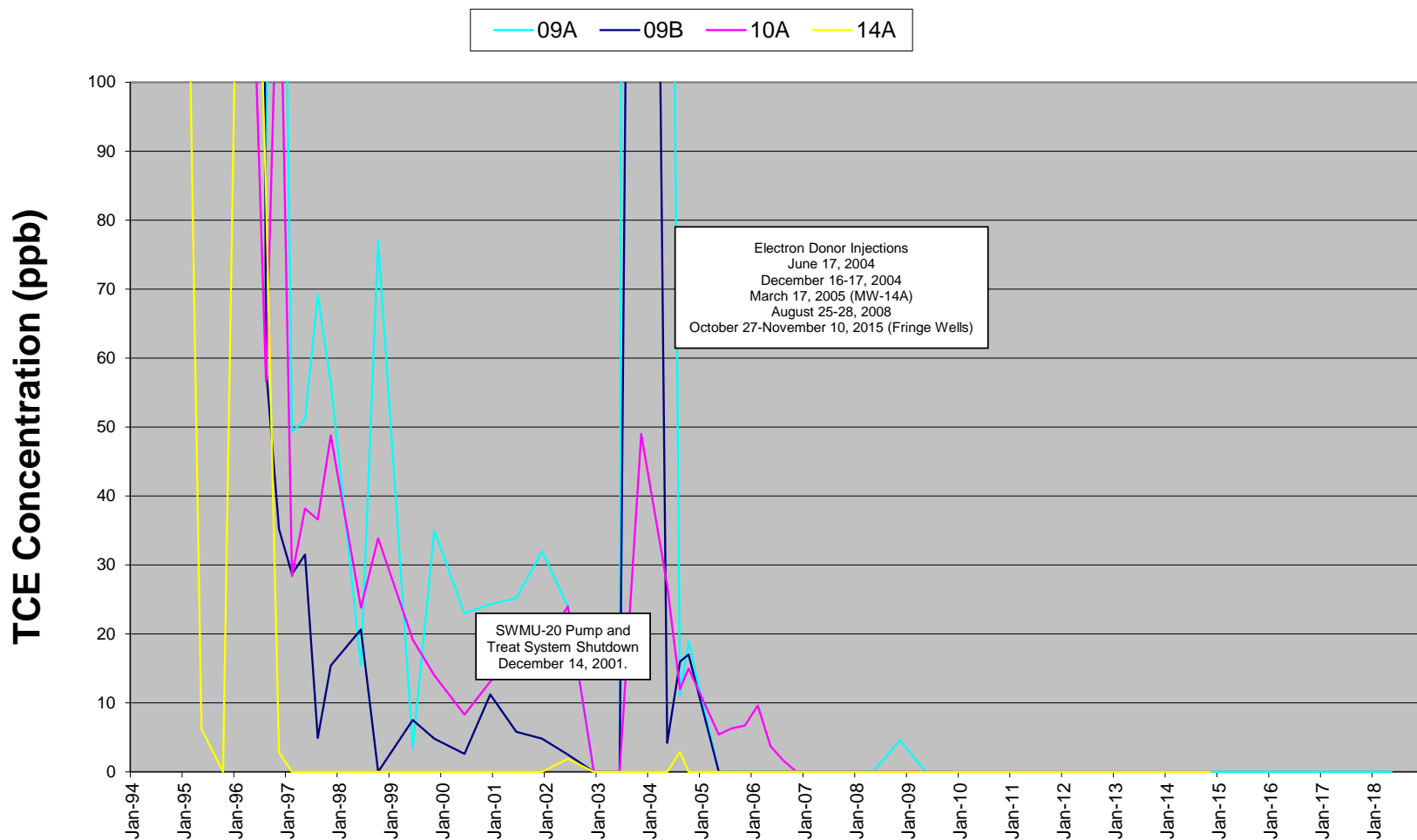


Figure 7
Developmental Center SWMU-20 Wells
cis-1,2-Dichloroethene Concentrations Trend Chart
(Wells with cis-1,2 DCE Historically Detected over 50 ppb)
January 1994 Through Present

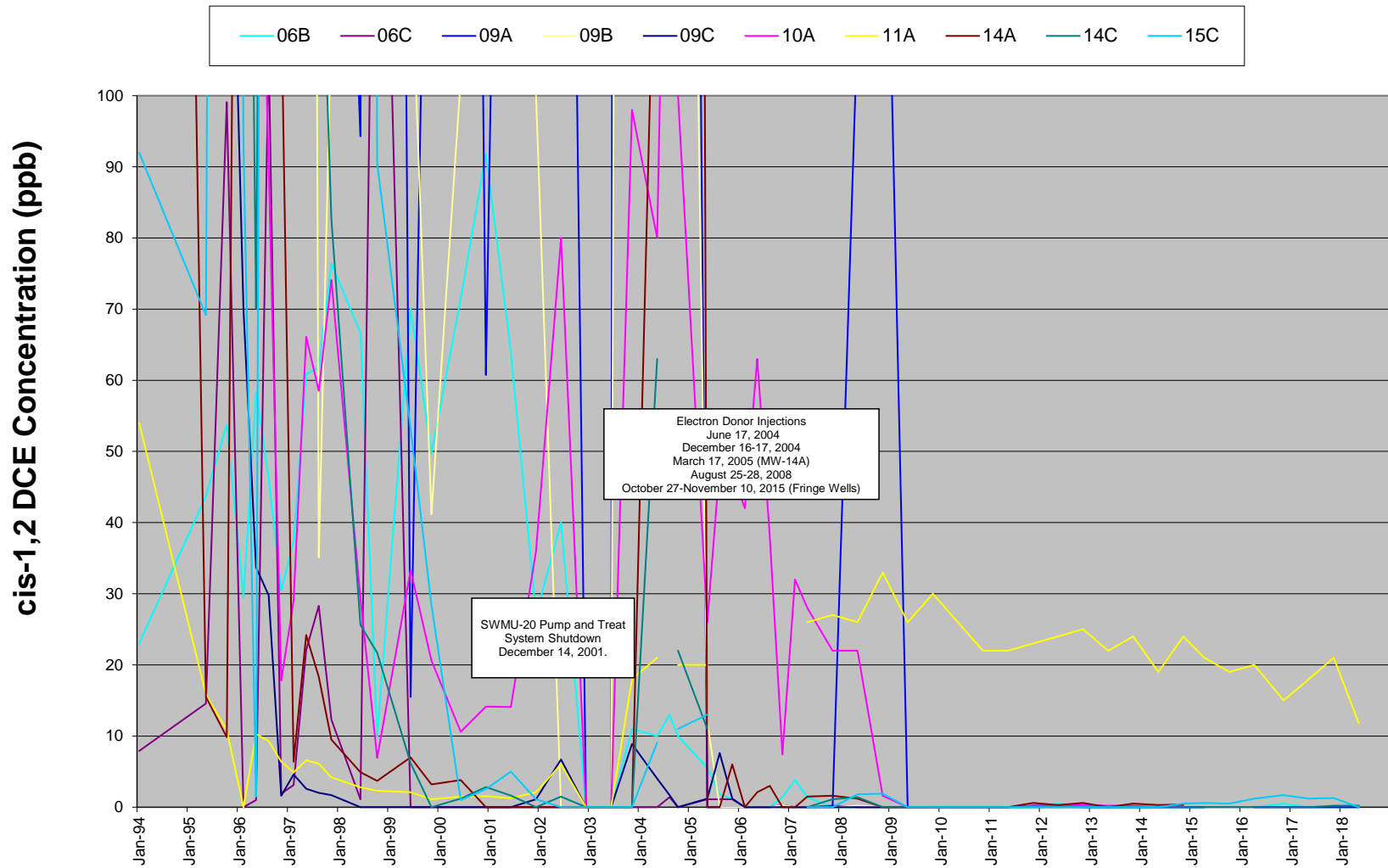


Figure 8
Developmental Center SWMU-20 Wells
Vinyl Chloride Concentrations Trend Chart
(Wells with VC Historically Detected over 50 ppb)
January 1994 Through Present

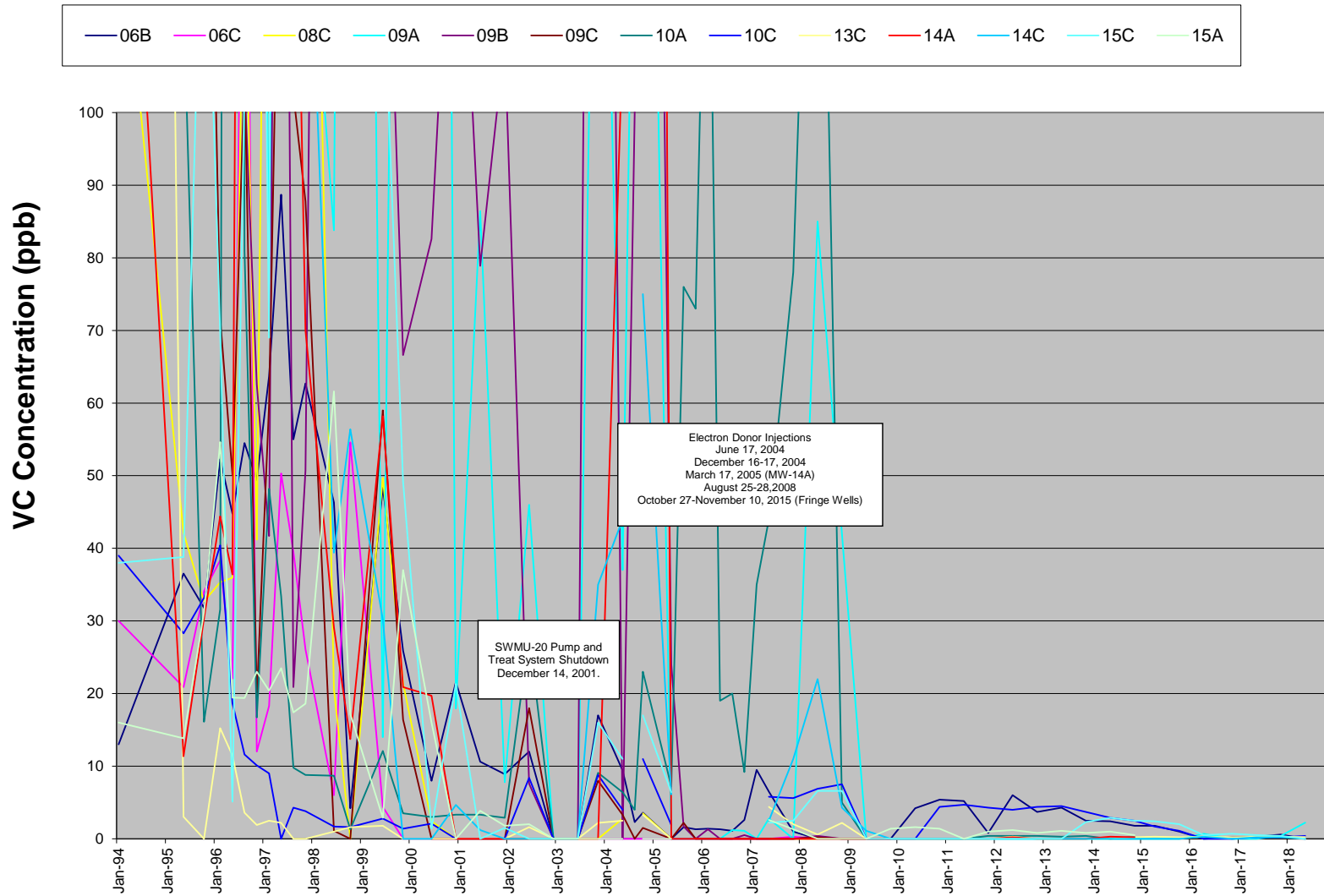
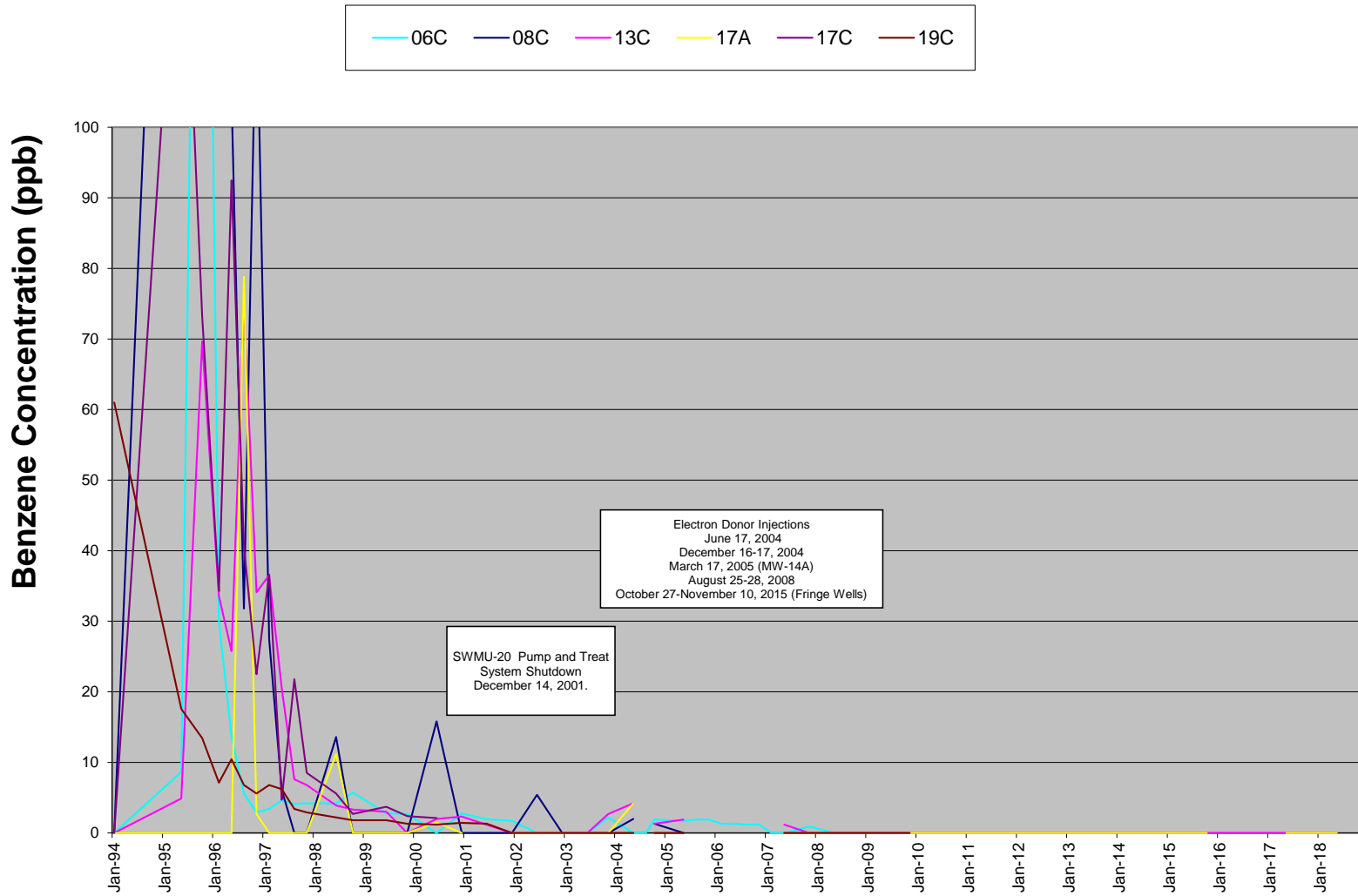


Figure 9
Developmental Center SWMU-20 Wells
Benzene Concentrations Trend Chart
(Wells with Benzene Historically Detected over 50 ppb)
January 1994 Through Present



***Developmental Center
Groundwater Monitoring
February/May 2018***

SWMU-17

- Table 1. VOA/Metals/Conventionals Data
- Table 2. Groundwater Data Cleanup Action Summary
- Figure 1. Injection and Monitoring Well Baseline Concentrations

Table 1
SWMU-17 VOA/Metals/Conventionals Data
Developmental Center Groundwater Monitoring
May 2018

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-05-12-Dup	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	Trip Blank
Lab SDG:	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080	18E0080
Lab Sample ID:	18E0080-07	18E0080-19	18E0080-13	18E0080-05	18E0080-09	18E0080-17	18E0080-03	18E0080-11	18E0080-15	18E0080-23	18E0080-01	18E0080-45	18E0080-41	18E0080-29	18E0080-27	18E0080-31	18E0080-43	18E0080-21	18E0080-33	18E0080-39	18E0080-37	18E0080-35	18E0080-25	18E0080-47
Sample Date:	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018	5/2/2018
Test ID: VOA SW8260C (µg/L)																								
Vinyl Chloride	1.83	2.00 U	2.00 U	0.20 U	2.00 U	0.20 U	3.32	2.00 U	1.12	0.46	0.45	0.60	0.33	0.20	0.44	0.59	3.42	0.20 U	1.04	0.83	1.02	0.20 U	0.20 U	0.20 U
cis-1,2-Dichloroethene	15.4	2.49	4.10	0.20 U	3.30	0.20 U	0.90	7.43	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	6.74	0.20 U	0.20 U	0.43	10.6	0.31	0.20 U	0.20 U
Trichloroethene	3.75	2.00 U	2.00 U	0.54	2.00 U	0.20 U	0.33	2.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.31	0.20 U	0.20 U	0.20 U	0.55	0.20 U	0.20 U	0.20 U
Tetrachloroethene	3.70	2.00 U	2.00 U	0.32	2.00 U	0.20 U	0.20 U	2.00 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Test ID: Total Metals (mg/L)																								
Arsenic (EPA 200.8)	0.0386	0.0272	0.0122	0.00063	0.00734	0.0121	0.00766	0.0356	0.0135	0.00583 J	0.00684 J	0.0287	0.0253	0.044	0.0271	0.0324	0.00498	0.0105	0.0278	0.00802	0.033	0.0255	0.00081	
Copper (EPA 200.8)	0.050 U	0.050 U	0.010 U	0.00249	0.0222	0.0050	0.0005 U	0.0627	0.0009	0.0005 U	0.0005 U	0.0005	0.0005 U	0.0004	0.0005 U	0.0005 U	0.00175	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0007	0.0005 U	
Test ID: Dissolved Metals (mg/L)																								
Arsenic (EPA 200.8)	0.0351	0.01850	0.00722	0.00035	0.00554	0.0076	0.0073	0.0224	0.0129	0.00781 J	0.00864 J	0.0261	0.0245	0.0438	0.026	0.0322	0.00451	0.00781	0.0278	0.00842	0.0318	0.0263	0.0008	
Copper (EPA 200.8)	0.050 U	0.050 U	0.010 U	0.0019	0.010 U	0.0005 U	0.0005 U	0.050 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0004	0.0005 U	0.0005 U	0.0005 U	0.0005 U	
Test ID: Conventional (mg/L)																								
Sulfate (EPA 300.0)	135	1.00 U	1.00 U	24.6	0.500 U	0.137	0.195	1.00 U	0.107	0.104	0.105	0.112	10.4	0.108	0.100 U	0.100 U	0.823	0.124	0.100 U	7.32	10.9	11.4	0.100 U	
Total Organic Carbon (SM5310C)	9,629	4,463	1,246	1.92	626.6	5.97	38.83	1,453	40.80	19.37	18.23	21.48	20.57	19.57	13.06	14.86	27.88	22.62	12.18	4.95	5.66	5.60	10.90	
Test ID: Dissolved Gases; Mod RSK-175 (µg/L)																								
Methane	10,200	9,070	14,000		16,100		15,300	13,800	14,800	14,200	13,200	16,000	10,100	11,300	12,200	10,000	15,600	13,800	3,900	9,110			7,240	
Ethane	1.23 U	1.23 U	1.23 U		1.23 U		1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U	1.23 U			1.23 U	
Ethene	1.14 U	1.14 U	1.14 U		1.14 U		1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U	1.14 U			1.14 U	
Acetylene	1.06 U	1.06 U	1.06 U		1.06 U		1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U			1.06 U	

µg/L = micrograms per liter
 mg/L = milligrams per liter
 EPA = US 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.

Table 2
Groundwater Data Cleanup Action Summary
Boeing Developmental Center
SWMU-17

Table with columns: Pilot Injection, Full Injection #1, Full Injection #2, Volatile Organic Compounds, Metals, Aquifer Redox Conditions, Donor Indicators, VOCs- micromoles/Liter (b), Molar Fraction (c). Rows include Well, Date, Elapsed Time, and various chemical parameters like PCE, TCE, cDCE, VC, Ethene, Ethane, Acetylene, As, Tot, As, Dis, Cu, Tot, Cu, Dis, DO, Nitrate, Iron II, Sulfate, Methane, ORP, TOC, pH, Total Chloroethenes, Ethene + Ethane.

Table 2 Groundwater Data Cleanup Action Summary Boeing Developmental Center SWMU-17

Table with columns for Pilot Injection, Full Injection #1, Full Injection #2, Volatile Organic Compounds (PCE, TCE, cDCE, VC, Ethene, Ethane, Acetylene), Metals (As, Cu), Aquifer Redox Conditions (DO, Nitrate, Iron II, Sulfate, Methane, ORP), Donor Indicators (TOC, pH), VOCs-micromoles/Liter (PCE, TCE, cDCE, VC, Ethene, Ethane, Total Chloroethenes, Ethene + Ethane), and Molar Fraction (PCE, TCE, cDCE, VC, Ethene + Ethane). Rows include data for wells BDC-05-05, BDC-05-07, and BDC-05-08 across various dates from 2007 to 2018.

Table 2
Groundwater Data Cleanup Action Summary
Boeing Developmental Center
SWMU-17

Table with columns: Pilot Injection, Full Injection #1, Full Injection #2, Volatile Organic Compounds (PCE, TCE, cDCE, VC, Ethene, Ethane, Acetylene), Metals (As, Cu), Aquifer Redox Conditions (DO, Nitrate, Iron, Sulfate, Methane, ORP), Donor Indicators (TOC, pH), VOCs-micromoles/Liter (PCE, TCE, cDCE, VC, Ethene, Ethane, Total Chloroethenes, Ethene + Ethane), and Molar Fraction (PCE, TCE, cDCE, VC, Ethene + Ethane). Rows include well IDs, dates, and various chemical concentrations.

Table 2
Groundwater Data Cleanup Action Summary
Boeing Developmental Center
SWMU-17

Table with columns: Pilot Injection, Full Injection #1, Full Injection #2, Volatile Organic Compounds, Metals, Aquifer Redox Conditions, Donor Indicators, VOCs- micromoles/Liter (b), and Molar Fraction (c). Rows include data for wells BDC-05-16 through BDC-05-19 across various dates from 2011 to 2018.

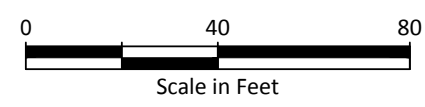
Table 2
Groundwater Data Cleanup Action Summary
Boeing Developmental Center
SWMU-17

Table with columns: Well, Date, Pilot Injection Elapsed Time, Full Injection #1 Elapsed Time, Full Injection #2 Elapsed Time, Volatile Organic Compounds (PCE, TCE, cDCE, VC, Ethene, Ethane, Acetylene), Metals (As, Cu), Aquifer Redox Conditions (DO, Nitrate, Iron II, Sulfate, Methane, ORP), Donor Indicators (TOC, pH), VOCs-micromoles/Liter (PCE, TCE, cDCE, VC, Ethene, Ethane, Total Chloroethenes), and Molar Fraction (PCE, TCE, cDCE, VC, Ethene + Ethane).



Legend	
	Monitoring Well
	August 2011 Injection Well
	November 2017 Injection Well
	Abandoned Monitoring Well
	Catch Basin
	Manhole
	Sanitary Sewer Utility
	Storm Drain Utility
	Electrical Utility
	Water Utility
	Existing Fence
	Baseline Concentration Contours for PCE and/or TCE (µg/L)
	Groundwater Flow Direction
	Solid Waste Management Unit

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



Boeing Developmental Center Tukwila, Washington	Injection and Monitoring Well Baseline Concentrations	Figure 1
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***Developmental Center
Groundwater Monitoring
February/May 2018***

AOC-05

- Table 1. Cleanup Action Data Summary
- Table 2. Nitrate Concentrations at Downgradient Monitoring Locations

- Figure 1. BDC-103 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing
- Figure 2. BDC-104 TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing
- Figure 3. BDC-101 TPH-G and Benzene Concentrations Since 2001
- Figure 4. BDC-102 TPH-G and Benzene Concentrations Since 2001
- Figure 5. BDC-103 TPH-G and Benzene Concentrations Since 2001
- Figure 6. BDC-104 TPH-G and Benzene Concentrations Since 2001
- Figure 7. BDC-103 Nitrate, TPH-G, and Benzene Concentrations
- Figure 8. BDC-104 Nitrate, TPH-G, and Benzene Concentrations
- Figure 9. Site Plan

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

Table with columns: Well, Date, Injection types (ORC, Pilot, Full Scale 1-11), Elapsed Time (days), Volatile Organic Compounds (TPH-G, Benzene, Toluene, Ethylbenzene, m,p-Xylene, o-Xylene, Total Xylenes), Aquifer Redox Conditions (DO, Nitrate, Nitrite, Iron II, Sulfate, Methane, ORP), Donor Indicators (TOC, pH), and Comments. Includes a 'Proposed Groundwater Cleanup Levels (a)' row.

**Table 1
AOC-05 Clean-Up Action Data Summary
Boeing Developmental Center
Tukwila, Washington**

Well	Date	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	Full Scale Injection 11	Volatile Organic Compounds							Aquifer Redox Conditions						Donor Indicators		Comments																	
		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	BDC-103	BDC-103	TPH-G	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Xylenes	DO	Nitrate	Nitrite	Iron II	Sulfate	Methane	ORP		TOC	pH															
		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)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	Elapsed Time from Injection (days)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg-N/L)	(mg-N/L)	(mg/L)	(mg/L)	(µg/L)	(mV)		(mg/L)																
Proposed Groundwater Cleanup Levels (a)																0.8	2.0	1294	1.7	NA	NA	1546																									
BDC-104	8/28/2013	4,131	2,414	2,010	1,891	1,763	1,533	1,400	1,071	561	309	-76			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.52	16.4	<0.10	1.0	35.3		-32.2		6.82																	
BDC-104	11/19/2013	4,214	2,497	2,093	1,974	1,846	1,616	1,483	1,154	644	392	7			<0.25	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	8.09	0.47	<0.10	0.0	3.1		-35		7.16																	
BDC-104	2/11/2014	4,298	2,581	2,177	2,058	1,930	1,700	1,567	1,238	728	476	91			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.11	0.54	<0.10	0.0	3.4		-135		7.04																	
BDC-104	5/6/2014	4,382	2,665	2,261	2,142	2,014	1,784	1,651	1,322	812	560	175			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.49	0.35	<0.10	0.0	4.2		-113		6.82																	
BDC-104	8/7/2014	4,475	2,758	2,354	2,235	2,107	1,877	1,744	1,415	905	653	268			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.04	2.9	<0.10	0.0	4.4		64		7.44																	
BDC-104	11/4/2014	4,564	2,847	2,443	2,324	2,196	1,966	1,833	1,504	994	742	357			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.66	2.1	<0.10	0.0	10.1		39		6.50																	
BDC-104	1/21/2015	4,642	2,925	2,521	2,402	2,274	2,044	1,911	1,582	1,072	820	435			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.02	11.3	<0.10	0.0	36.3		135		5.87																	
BDC-104	4/28/2015	4,739	3,022	2,618	2,499	2,371	2,141	2,008	1,679	1,169	917	532			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.37	11.3	<0.10	0.0	74.4		85		6.09																	
BDC-104	7/20/2015	4,822	3,105	2,701	2,582	2,454	2,224	2,091	1,762	1,252	1,000	615			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.18	11.7	<0.10	0.2	74.4		-22		6.48																	
BDC-104	10/26/2015	4,920	3,203	2,799	2,680	2,552	2,322	2,189	1,860	1,350	1,098	713			<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.20	14.1	<0.10	1.0	84.2		-2.0		6.72																	
BDC-104	1/27/2016	5,013	3,296	2,892	2,773	2,645	2,415	2,282	1,953	1,443	1,191	806	-56		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.13	11.5	<0.10	0.0	69.1		16.0		6.67																	
BDC-104	4/13/2016	5,090	3,373	2,969	2,850	2,722	2,492	2,359	2,030	1,520	1,268	883	21		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.65	20.2	<0.10	0.0	96.9		31		6.75																	
BDC-104	8/9/2016	5,208	3,491	3,087	2,968	2,840	2,610	2,477	2,148	1,638	1,386	1,001	139		<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	8.1	<0.10		42.2		-27.2		6.30																	
BDC-104	11/1/2016	5,292	3,575	3,171	3,052	2,924	2,694	2,561	2,232	1,722	1,470	1,085	223	-35	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.91	3.4	<0.10		22.3		-9.8		6.49																	
BDC-104	2/7/2017	5,390	3,673	3,269	3,150	3,022	2,792	2,659	2,330	1,820	1,568	1,183	321	63	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.03	0.58	<0.10		5.2		69.2		5.93																	
BDC-104	5/3/2017	5,475	3,758	3,354	3,235	3,107	2,877	2,744	2,415	1,905	1,653	1,268	406	148	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.06	23.6	<0.10		84.3		80.9		5.85																	
BDC-104	8/1/2017	5,565	3,848	3,444	3,325	3,197	2,967	2,834	2,505	1,995	1,743	1,358	496	238	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.00	7.0	<0.10		29.1		125.9		5.83																	
BDC-104	11/7/2017	5,663	3,946	3,542	3,423	3,295	3,065	2,932	2,603	2,093	1,841	1,456	594	336	<0.25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.82	0.17	<0.10		4.5		60.4		6.89																	
BDC-104	2/5/2018	5,753	4,036	3,632	3,513	3,385	3,155	3,022	2,693	2,183	1,931	1,546	684	426	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	6.93	0.230	<0.10		4.76		90.6		6.18																	
BDC-104	5/1/2018	5,838	4,121	3,717	3,598	3,470	3,240	3,107	2,778	2,268	2,016	1,631	769	511	<0.1	<0.20	<0.20	<0.20	<0.40	<0.20	<0.60	4.25	1.22	<0.10		4.05		172.3		6.09																	

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

☐ = No sample collected or sample not analyzed for specified constituent.
 ☐ = 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) BTEX data questionable for this event. Concentrations inconsistent with TPH-G data for indicated event and BTEX data from other events.

Injection Dates	Months Since Prior Injection Event	Injection Event
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)
12/6/2016	9	11th full scale injection (103 only 1.5x volume dose)

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

Area	Well	Date		Aquifer Redox Conditions					
				DO (mg/L)	Nitrate (mg-N/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (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	Downgradient Monitoring Triggered	2.45	7.6	0.1	31.0	0.29	73.5
SWMU-17	BDC-05-04	11/2/2008		0.59	4.5	0.8	25.2	0.05	-16
SWMU-17	BDC-05-04	12/16/2008		0.55	5.5	1.0	30.4	1.61	-98
SWMU-17	BDC-05-04	1/16/2009		0.06	4.3	1.0	21.8	1.48	-192
SWMU-17	BDC-05-04	2/11/2009		2.45	5.9	1.0	31.8	1.06	-54
SWMU-17	BDC-05-04	3/9/2009		0.27	4.8	1.5	30.1	0.20	35
SWMU-17	BDC-05-04	4/16/2009		1.48	5.9	1.4	33.6	<0.0007	68
SWMU-17	BDC-05-04	5/13/2009		0.33	4.5	1.6	26.6	0.37	49
SWMU-17	BDC-05-04	8/16/2009		0.86	5.4	2.2	30.6	<0.0007	93
SWMU-17	BDC-05-04	11/13/2009		0.56	2.2	3.0	18.4	2.44	109
SWMU-17	BDC-05-04	2/16/2010		0.88	<0.1	3.3	24.6	1.49	899
SWMU-17	BDC-05-04	5/18/2010		0.75	<0.1	3.0	25.4	1.32	473
SWMU-17	BDC-05-04	8/17/2010		1.00	<0.1	2.8	17.1	3.53	108
SWMU-17	BDC-05-04	11/9/2010		2.21	<0.1	2.2	21.3	3.00	101
SWMU-17	BDC-05-04	2/15/2011		2.50	<0.1	2.4	19.4	4.46	93
SWMU-17	BDC-05-04	5/2/2011		1.69	<0.1	2.2	18.0	1.75	49
SWMU-17	BDC-05-04	11/2/2011		1.52	<1.0	1.2	<1.0		-3
SWMU-17	BDC-05-04	5/7/2012		0.16		2.0	21.5		98
SWMU-17	BDC-05-04	9/4/2012		0.21	<0.10		16.6		96
SWMU-17	BDC-05-04	11/13/2012		0.03	<0.10	1.8	16.9		64
SWMU-17	BDC-05-04	5/23/2013		0.49		1.5	13.7		-310
SWMU-17	BDC-05-04	11/19/2013		2.56	<0.10	1.0	13.2		-259
SWMU-17	BDC-05-04	5/6/2014		3.49	0.40		14.4		-299
SWMU-17	BDC-05-04	11/4/2014		0.05	<0.10	1.6	<1.0		-126
SWMU-17	BDC-05-04	4/28/2015		0.11	5.0	0.4	13.5		74
SWMU-17	BDC-05-04	10/26/2015		0.08	<0.10	1.5	<1.0		-101
SWMU-17	BDC-05-04	4/13/2016		0.57	5.5		13.9		46
SWMU-17	BDC-05-04	11/2/2016		0.39	<0.10		0.75		-140.5
SWMU-17	BDC-05-04	5/3/2017		0.42	8.8	0.6	12.0		73.8
SWMU-17	BDC-05-04	11/6/2017		0.93	<0.050	2.0	2.7		-28.3
SWMU-17	BDC-05-04	5/2/2018	4.25		4.7	<1.0		-107.0	
SWMU-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-17A	11/1/2016		0.41	<0.10	1.4			-215.9
SWMU-20	MW-17A	5/3/2017		0.62	<0.10	2.2			-225
SWMU-20	MW-17A	11/7/2017		0.57	<0.10	1.8	<0.30		23.8
SWMU-20	MW-17A	5/1/2018		0.19	<0.5	2.4	<0.5		-127.4

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

Area	Well	Date		Aquifer Redox Conditions					
				DO (mg/L)	Nitrate (mg-N/L)	Iron II (mg/L)	Sulfate (mg/L)	Methane (mg/L)	ORP (mV)
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
SWMU-20	MW-18A	11/1/2016		0.26	<0.10	0.4			-8.5
SWMU-20	MW-18A	5/3/2017		1.22	0.26	0.0			63.7
SWMU-20	MW-18A	11/7/2017		0.55	<0.10	0.0	14.2		7.0
SWMU-20	MW-18A	5/1/2018		0.83	<0.10	0.0	36.8		-15.6
<hr/>									
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
SWMU-20	MW-21A	11/1/2016		1.71	0.10	0.2			78
SWMU-20	MW-21A	5/3/2017		3.41	0.19	0.0			99.8
SWMU-20	MW-21A	11/7/2017		0.88	<0.10	0.0	11.0		44.2
SWMU-20	MW-21A	5/1/2018		3.49	<0.10	0.0	7.53		80.7

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

Figure 1
AOC-05 BDC-103

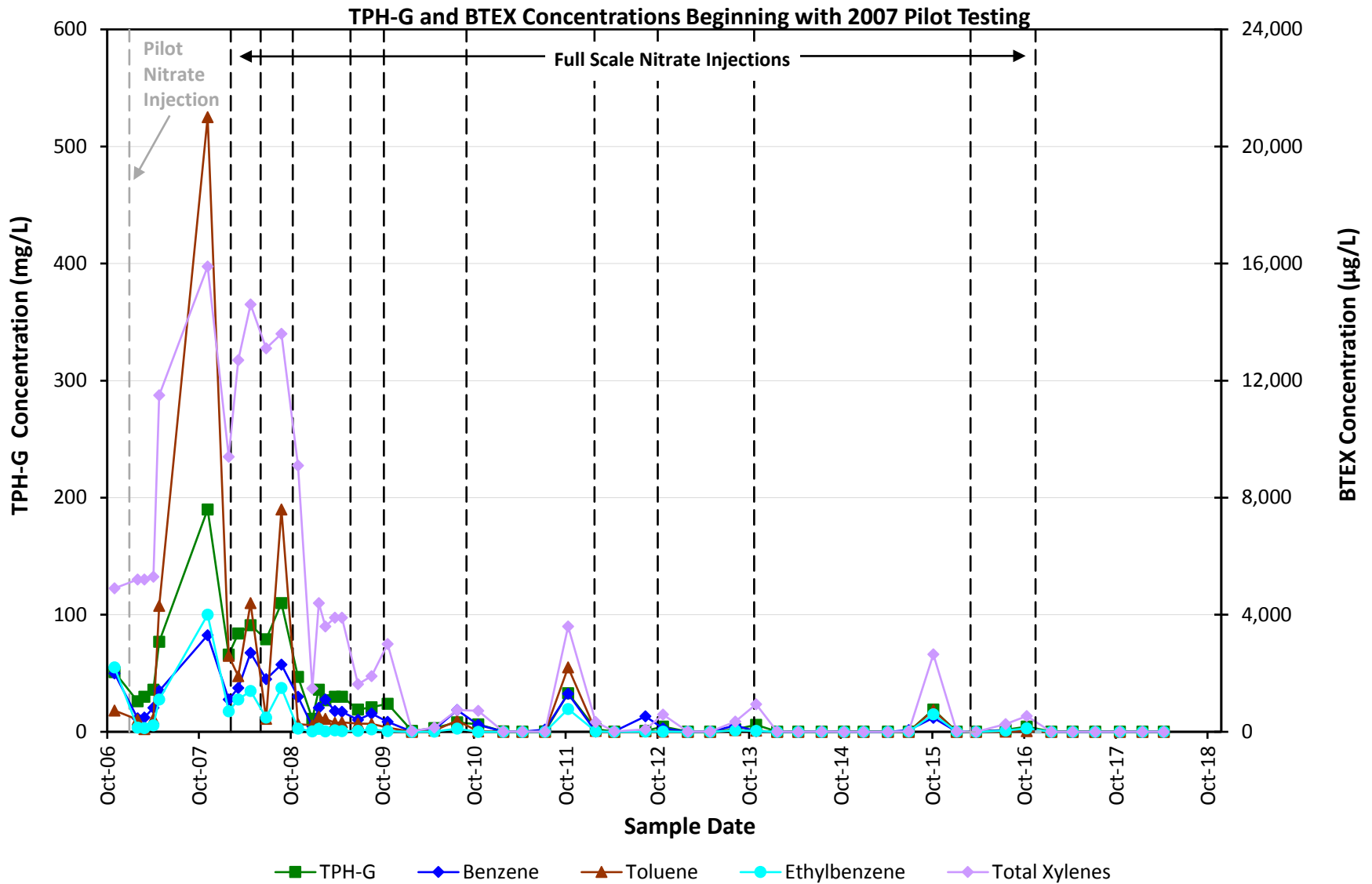
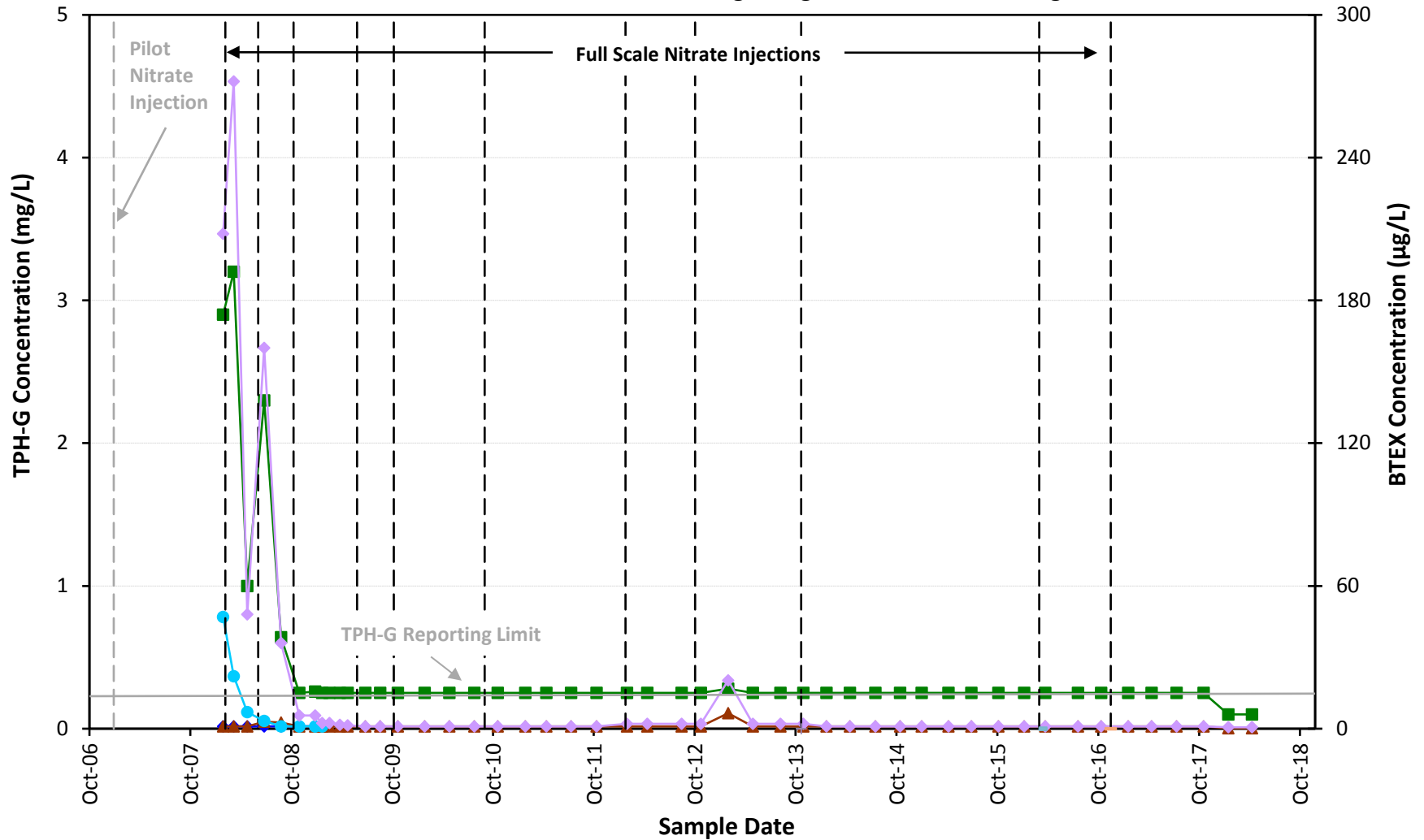


Figure 2
AOC-05 BDC-104

TPH-G and BTEX Concentrations Beginning with 2007 Pilot Testing



Note: BDC-104 was installed February 2008

Legend: ■ TPH-G ◆ Benzene ▲ Toluene ● Ethylbenzene ◆ Total Xylenes

Figure 3
AOC-05 BDC-101

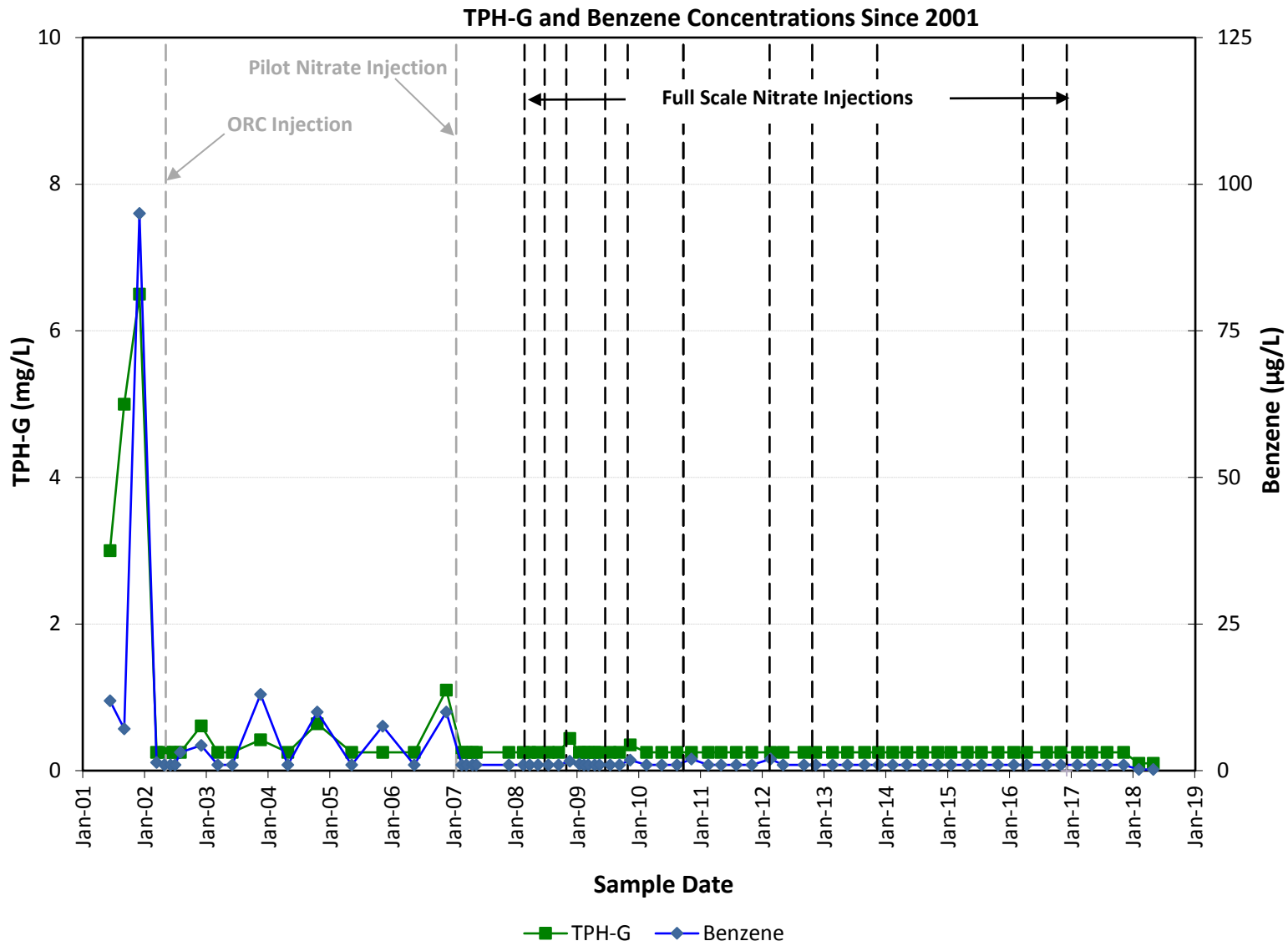


Figure 4
AOC-05 BDC-102
TPH-G and Benzene Concentrations Since 2001

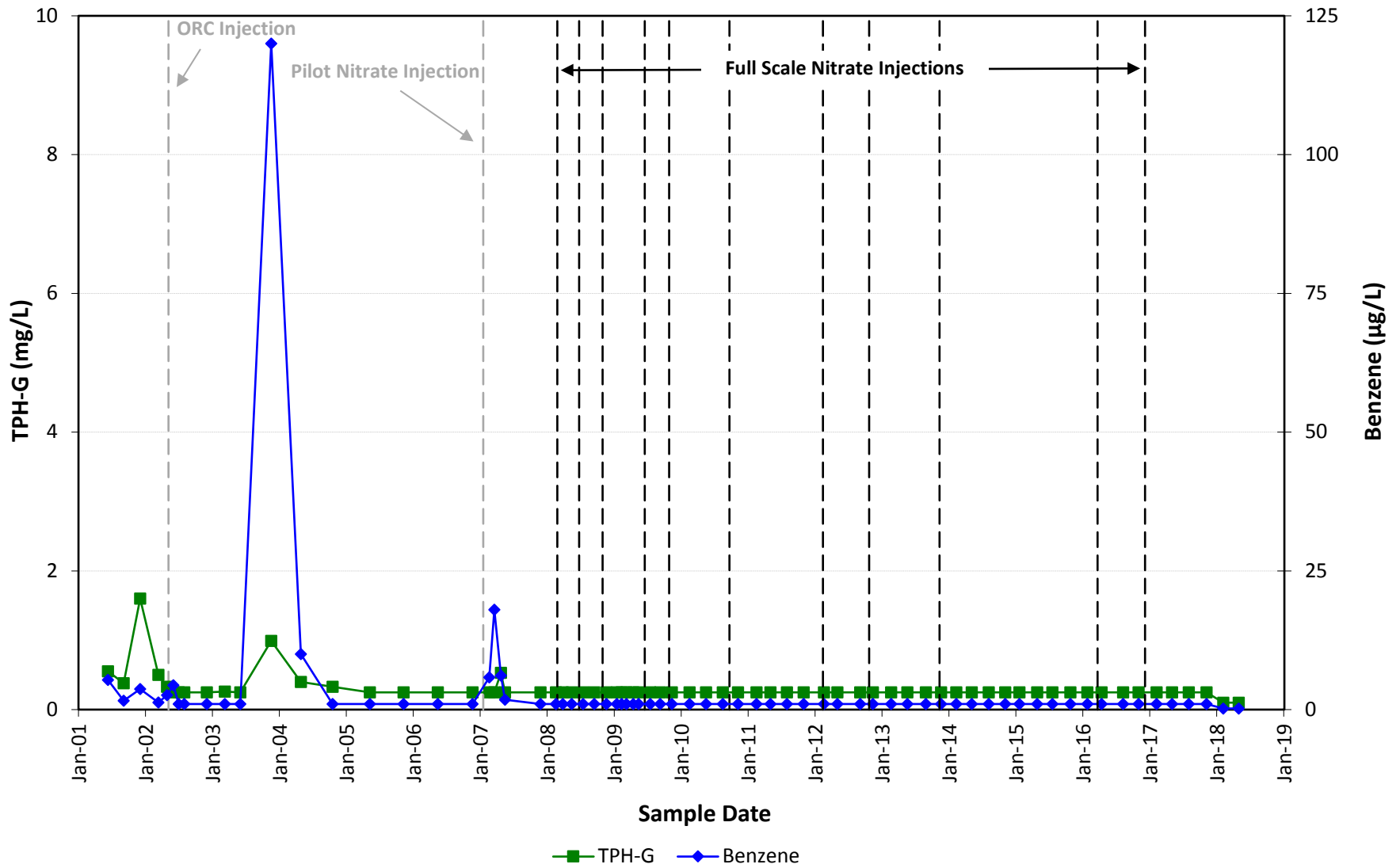


Figure 5
AOC-05 BDC-103
TPH-G and Benzene Concentrations Since 2001

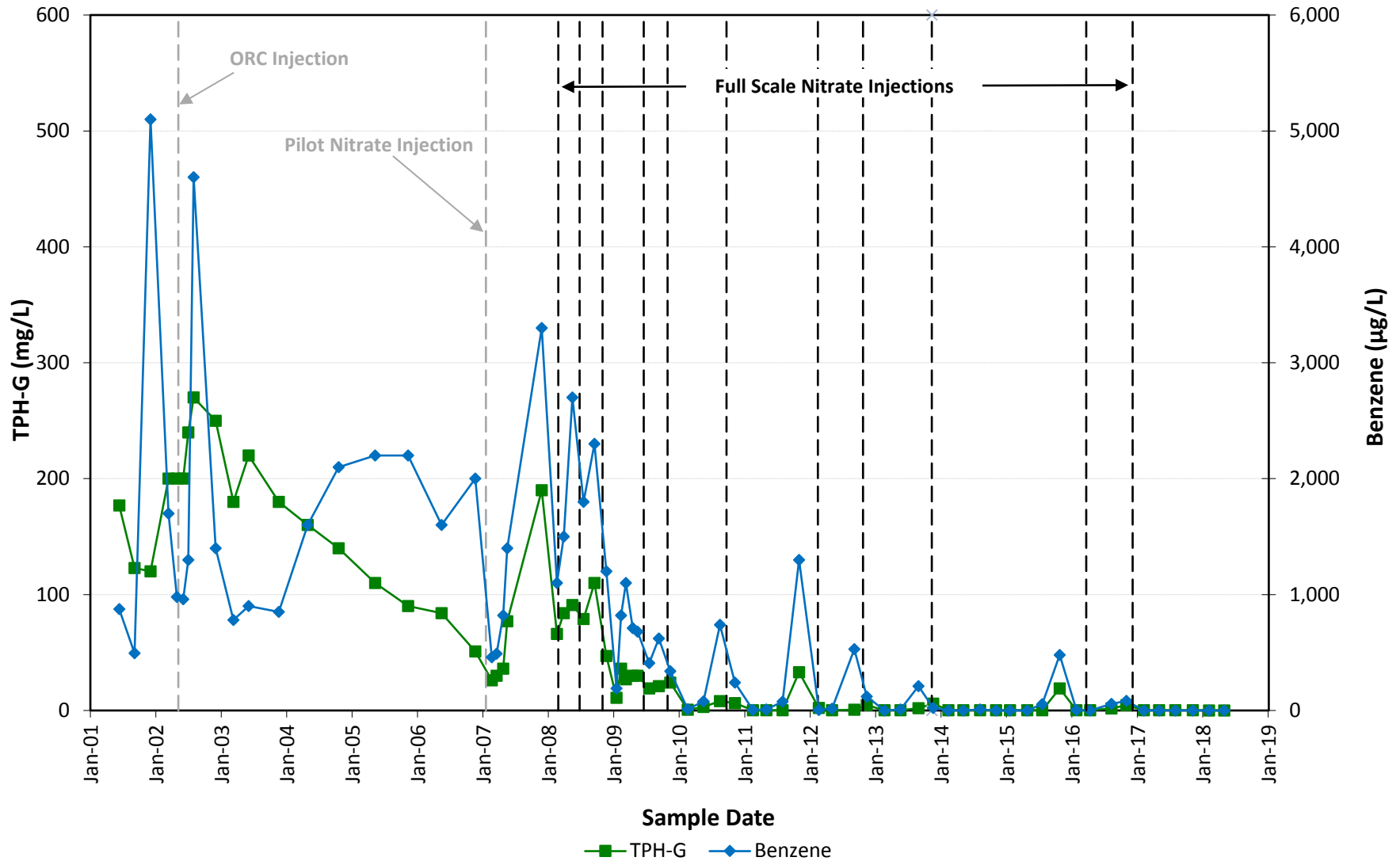
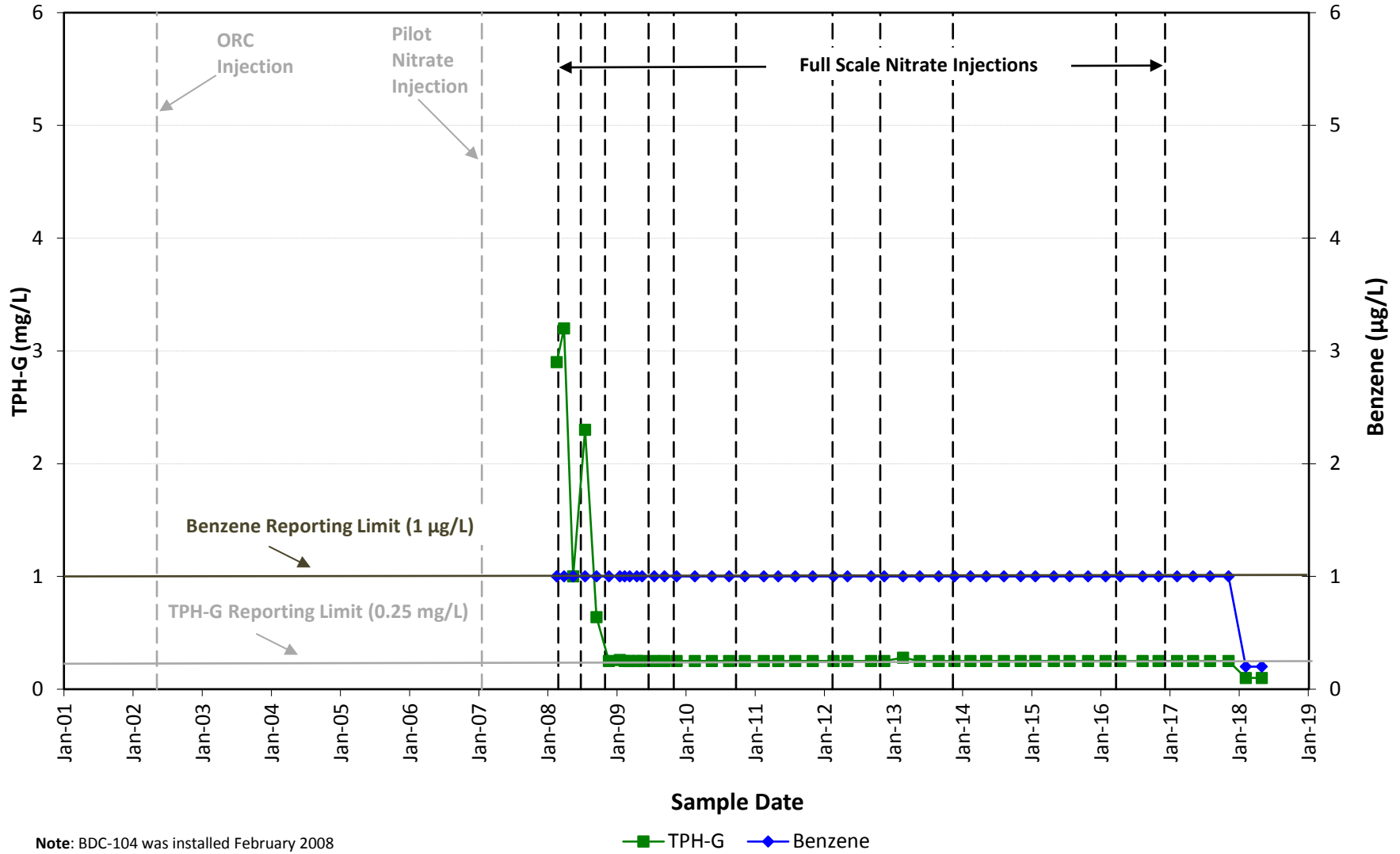


Figure 6
AOC-05 BDC-104
TPH-G and Benzene Concentrations Since 2001



Note: BDC-104 was installed February 2008

Figure 7
AOC-05 BDC-103
Nitrate, TPH-G, and Benzene Concentrations

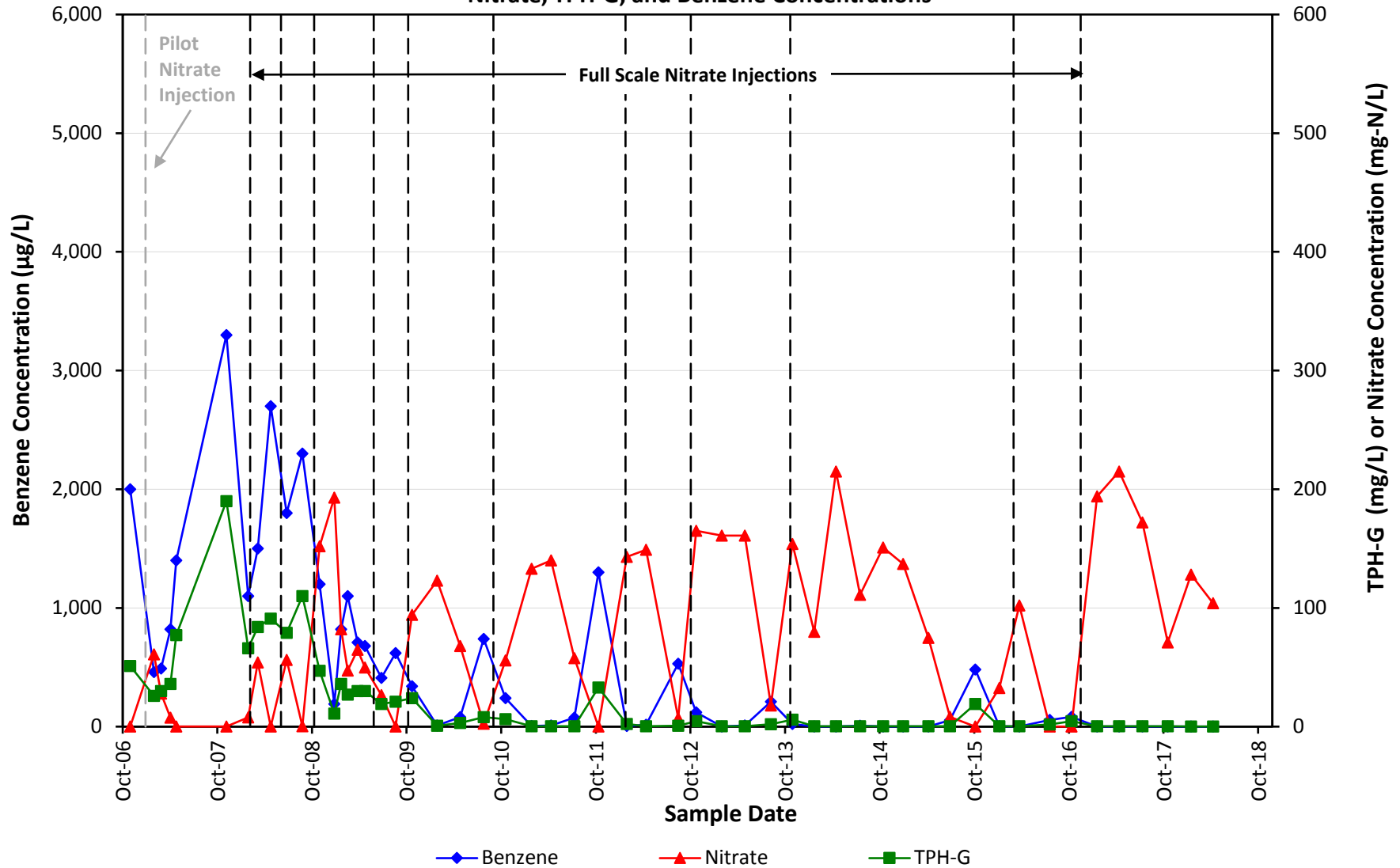
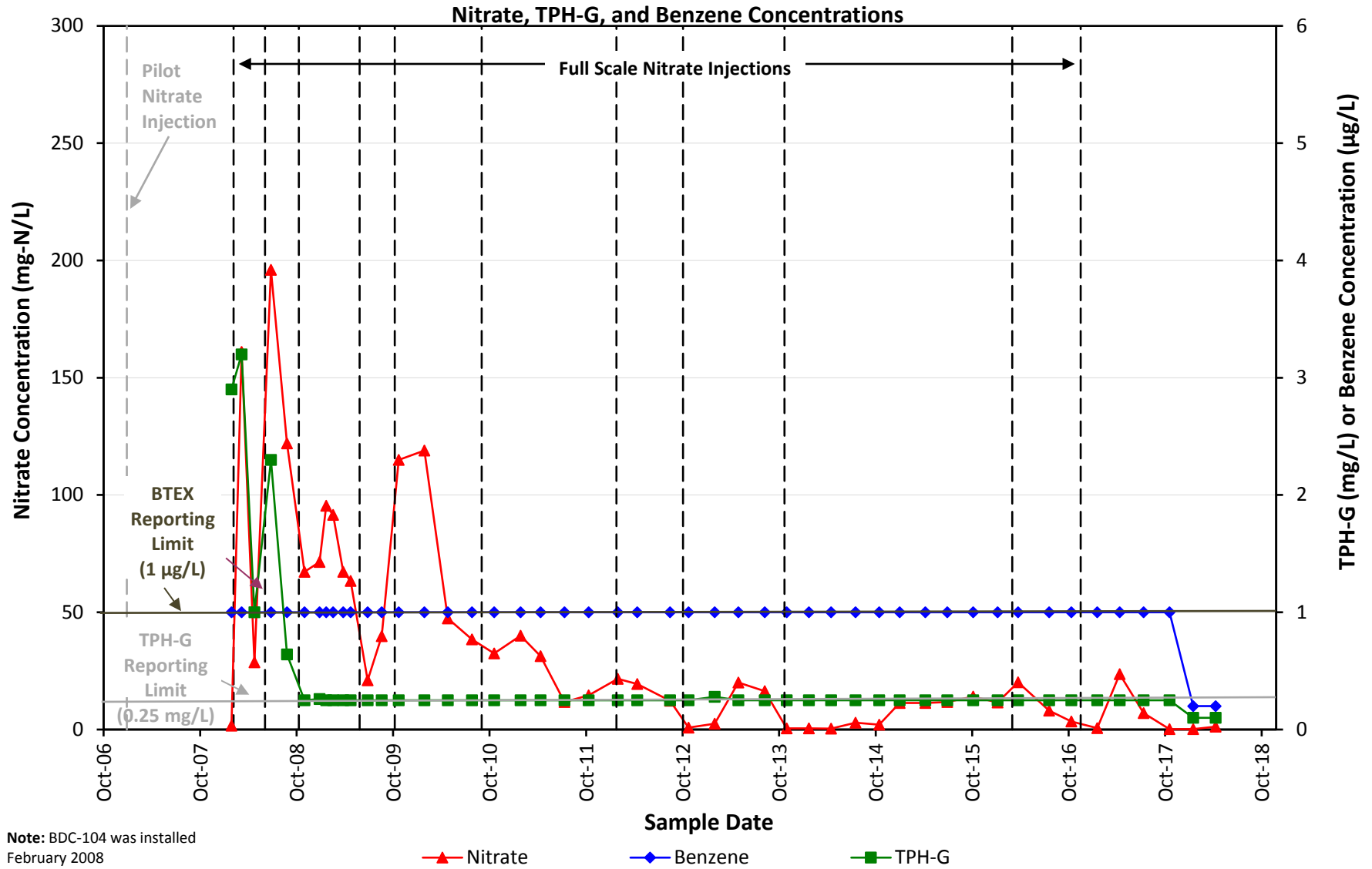
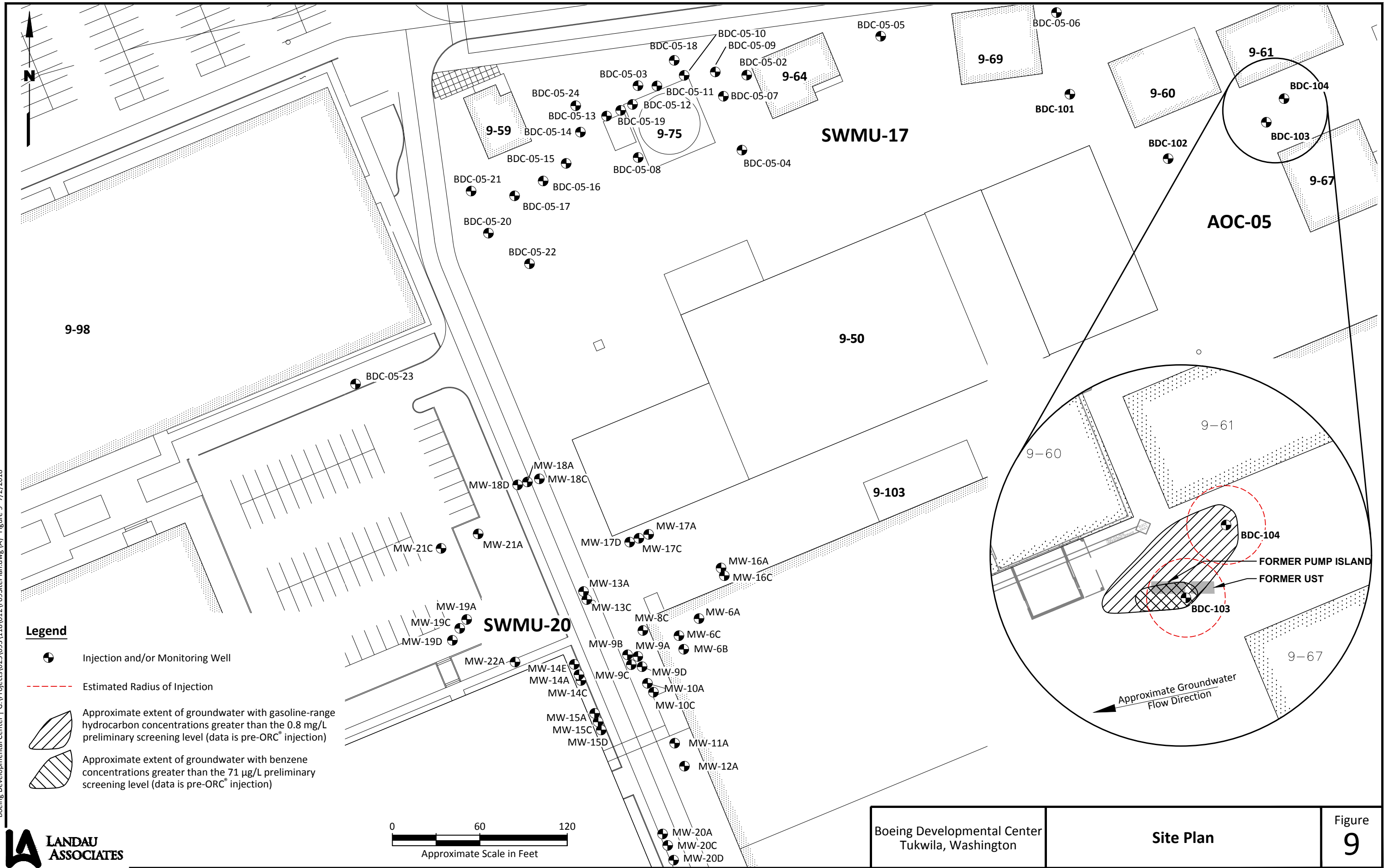


Figure 8
AOC-05 BDC-104





***Developmental Center
Groundwater Monitoring
February/May 2018***

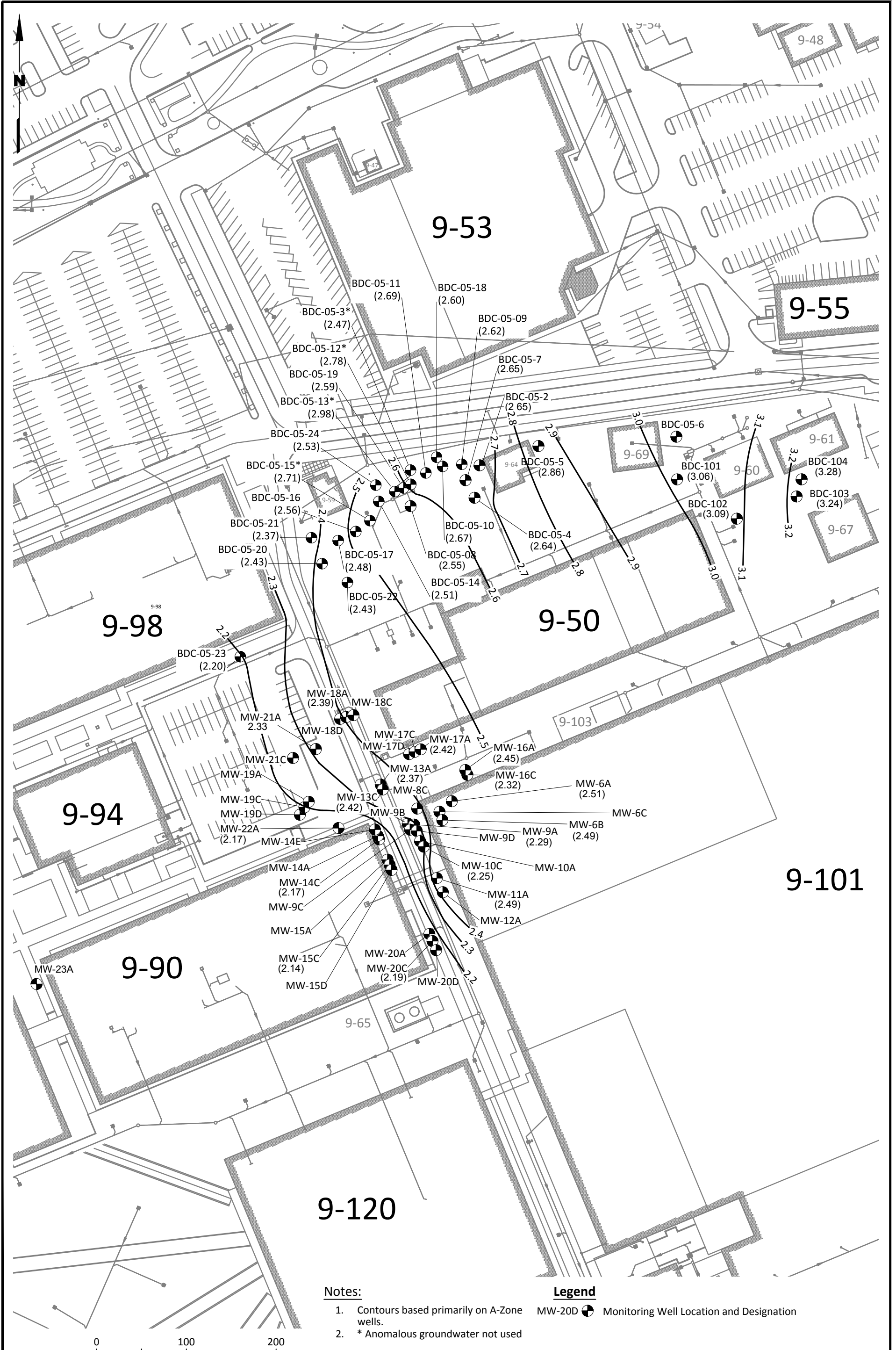
Groundwater Elevation Information

- Table 1. Cumulative Water Level Measurements (November 1999 to Present)
- Figure 1. Facility-Wide Groundwater Elevation Contours—May 2018

**Table 1
Developmental Center
Cumulative Water Level Measurements
November 1999 to Present**

Well Location / Bldg.	Well ID No.	Well Depth (ft)	June 2001		December 2000		June 2000		November 1999	
			Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)	Depth to Water (ft)	Water Elevation (ft)
9-101-bldg.	MW-6A	24.25								
9-101-bldg.	MW-6B	27.20	13.50	1.33	13.55	1.28	13.01	1.82	13.33	1.50
9-101-bldg.	MW-6C	40.55	13.67	1.32	13.70	1.29	13.15	1.84	13.50	1.49
9-101-bldg.	MW-8C	40.20	13.85	1.07	13.71	1.21	13.13	1.79	13.79	1.13
9-101-bldg.	MW-9A	21.30	13.76	0.88	13.72	0.92	12.78	1.86	13.67	0.97
9-101-bldg.	MW-9B	26.90	13.90	0.82	13.82	0.90	12.81	1.91	13.90	0.82
9-101-bldg.	MW-9C	38.80	13.64	1.04	13.57	1.11	12.75	1.93	13.60	1.08
9-101-bldg.	MW-9D	56.00	13.15	1.51	13.03	1.63	12.74	1.92	13.00	1.66
9-101-bldg.	MW-10A	20.20	13.52	1.17	13.62	1.07	12.84	1.85	13.50	1.19
9-101-bldg.	MW-10C	40.40	13.37	1.25	13.40	1.22	12.74	1.88	13.29	1.33
9-101-bldg.	MW-11A	19.90	13.35	1.53	13.52	1.36	12.91	1.97	13.20	1.68
9-101-bldg.	MW-12A	20.20	13.35	1.48	13.50	1.33	13.02	1.81	13.21	1.62
9-101-bldg.	MW-13A	19.37	12.59	1.55	12.76	1.38	12.50	1.64	12.33	1.81
9-101-bldg.	MW-13C	35.62	12.43	1.59	12.69	1.33	12.37	1.65	12.21	1.81
9-101-bldg.	MW-14A	19.00	13.00	1.47	12.98	1.49	12.70	1.77	12.78	1.69
9-101-bldg.	MW-14C	33.30	12.59	1.38	12.49	1.48	12.17	1.80	12.35	1.62
9-101-bldg.	MW-14E	82.10	7.83	6.35	7.44	6.74	7.45	6.73	7.90	6.28
9-101-bldg.	MW-15A	20.70	12.66	1.51	12.82	1.35	12.40	1.77	12.35	1.82
9-101-bldg.	MW-15C	34.35	12.80	1.37	12.77	1.40	12.36	1.81	12.49	1.68
9-101-bldg.	MW-15D	51.80	12.88	1.53	12.90	1.51	12.59	1.82	12.44	1.97
9-101-bldg.	MW-16A	20.55	13.55	1.44	13.50	1.49	13.19	1.80	13.34	1.65
9-101-bldg.	MW-16C	38.30	13.77	1.27	13.67	1.37	13.36	1.68	13.52	1.52
9-101-bldg.	MW-17A	19.00			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	12.61	1.69	12.84	1.46	12.55	1.75	12.38	1.92
9-101-bldg.	MW-18C	34.55	12.87	1.76	13.12	1.51	12.83	1.80	12.61	2.02
9-101-bldg.	MW-18D	52.85	12.58	1.68	12.85	1.41	12.52	1.74	12.33	1.93
9-101-bldg.	MW-19A	16.86	10.62	1.61	10.93	1.30	10.68	1.55	10.42	1.81
9-101-bldg.	MW-19C	33.92	10.55	1.68	10.89	1.34	10.65	1.58	10.35	1.88
9-101-bldg.	MW-19D	51.86	11.00	1.23	10.90	1.33	10.71	1.52	11.05	1.18
9-101-bldg.	MW-20A	19.34	12.60	1.71	12.89	1.42	12.44	1.87	12.75	1.56
9-101-bldg.	MW-20C	35.32	12.50	1.65	12.69	1.46	12.16	1.99	12.44	1.71
9-101-bldg.	MW-20D	50.15	12.83	1.60	12.87	1.56	12.41	2.02	12.66	1.77
9-101-bldg.	MW-22A	19.20								
9-101-bldg.	MW-23A	19.50								
9-101/9-50 bldg.	MW-21A	19.90	12.77	1.68	13.04	1.41	12.93	1.52	12.50	1.95
9-101/9-50 bldg.	MW-21C	34.00	10.50	1.70						
9-64-bldg.	BDC-05-02	25.35	12.38	1.99	12.56	1.81	12.37	2.00	12.03	2.34
9-64-bldg.	BDC-05-03	25.47	12.56	1.85	12.82	1.59	12.56	1.85	12.33	2.08
9-64-bldg.	BDC-05-04	25.36	12.69	1.90	12.86	1.73	12.65	1.94	12.33	2.26
9-64-bldg.	BDC-05-05	24.18	12.37	2.07	12.53	1.91	12.36	2.08	11.96	2.48
9-64-bldg.	BDC-05-07	25.30	12.10	1.89	12.28	1.71	12.08	1.91	11.72	2.27
9-64-bldg.	BDC-05-08	26.75								
9-64-bldg.	BDC-05-09	24.55								
9-64-bldg.	BDC-05-10	24.57								
9-64-bldg.	BDC-05-11	24.85								
9-64-bldg.	BDC-05-12	24.87								
9-64-bldg.	BDC-05-13	24.78								
9-64-bldg.	BDC-05-14	24.85								
9-64-bldg.	BDC-05-15	24.48								
9-64-bldg.	BDC-05-16	24.89								
9-64-bldg.	BDC-05-17	24.82								
9-64-bldg.	BDC-05-18	24.69								
9-64-bldg.	BDC-05-19	24.85								
9-64-bldg.	BDC-05-20	24.80								
9-64-bldg.	BDC-05-21	24.86								
9-64-bldg.	BDC-05-22	25.07								
9-64-bldg.	BDC-05-23	25.10								
9-64-bldg.	BDC-05-24	24.73								
9-60 bldg.	BDC-101	18.42	12.30	2.17						
9-60 bldg.	BDC-102	18.83	12.06	2.21						
9-60 bldg.	BDC-103	18.51	12.04	2.30						
9-60 bldg.	BDC-104	18.90								
9-52-bldg.	952MW-1	17.40	11.25	2.23	11.50	1.98			10.97	2.51
9-52-bldg.	952MW-2	17.54	11.48	2.52	11.76	2.24			11.25	2.75
9-52-bldg.	952MW-3	17.95	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	11.05	2.64						
9-04-bldg. (north)	MW-8	18.50	11.23	2.69						
9-04-bldg. (north)	MW-9	18.50	11.23	-11.23						

Notes:
ft = feet
Depth to Water measurements taken from top of well casing.
Top of casing elevation altered in wells MW-6B, MW-6C, MW-9A, MW-9B, and MW-9C by installation of threaded fitting on 6/19/2004.
Top of casing elevation was lowered in well MW-14A by 0.10 ft on 3/17/2005; resurveyed 9/9/05.
Top of casing elevation at wells MS-22A and MW-23A measured 9/9/05.
BDC-05-02 was modified in October 2008 for utilization as an injection well. Elevation changed from 14.37 to 14.41 ft; total depth changed from 25.35 to 25.27.

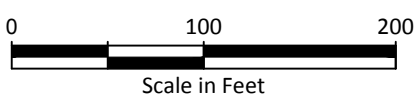


Notes:

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

Legend

MW-20D Monitoring Well Location and Designation



***Developmental Center
Groundwater Monitoring
February/May 2018***

DVD

- Groundwater Sample Collection Forms
- Analytical Data

SWMU-20
(Groundwater Sample Collection Forms and Analytical Data)

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1151
 Sample Number: MW-6A- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.29 Time: 1054 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1128 End Purge: Date/Time: 5/ 1 /2018 @ 1149 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1131	19.8	1564	0.28	7.12	30.2	LOW	12.35	<0.25	
1134	19.8	1564	0.26	7.13	20.1		12.38		
1137	19.8	1565	0.21	7.13	15.8		12.38	0.25	
1140	19.8	1567	0.21	7.14	6.9				
1143	19.8	1569	0.15	7.16	-12.9				
1146	19.8	1569	0.15	7.16	-20.7			0.5	
1148	19.8	1571	0.14	7.17	-26.2				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____

Sample Description (color, turbidity, odor, sheen, etc.): SLIGHTLY TURBID, AMBER COLOR, STRONG INJECTION FLUID ODOR/NS (EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	19.8	1570	0.14	7.17	-27.2				
2	19.8	1570	0.15	7.17	-28.2				
3	19.8	1571	0.14	7.17	-29.3				
4	19.8	1570	0.15	7.17	-30.2				
Average:	19.8	1570	0.15	7.17	-28.7	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/> (8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2) (Total Cyanide) (WAD Cyanide) (Free Cyanide) (Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid) VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1106
 Sample Number: MW-6B- 180501 Weather: INDOORS
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.6 Time: 1041 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1043 End Purge: Date/Time: 5/ 1 /2018 @ 1104 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1046	19.4	581	1.60	6.83	5.2		12.6	<0.25	SOY SAUCE
1049	19.2	580	1.08	6.79	7.2		12.62		
1052	19.1	578	1.06	6.77	8.5		12.62	<0.25	
1055	19.0	575	1.21	6.75	9.8				
1058	19.0	573	1.19	6.73	11.7				
1101	18.9	572	0.99	6.72	12.9				
1103	18.9	571	1.04	6.71	13.7				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): VERY TURBID, BLACK, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	18.9	571	1.04	6.71	13.8				
2	18.9	571	1.05	6.71	14.0				
3	18.9	571	1.06	6.71	14.1				
4	18.9	571	1.06	6.71	14.2				
Average:	18.9	571	1.05	6.71	14.0	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: TOOK ~25 MINUTES TO COLLECT THE SAMPLE. PLENTY OF WATER IN WELL, BUT PUMP IS CLOGGED I BELIEVE.
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1506
 Sample Number: MW-9A- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.45 Time: 1439 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1441 End Purge: Date/Time: 5/ 1 /2018 @ 1454 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1444	17.1	536	0.08	6.65	-19.7	LOW	12.47	<0.25	
1447	17.1	536	0.08	6.64	-28.5		12.47		
1450	17.1	535	0.08	6.61	-312.0		12.47	0.25	
1453	17.1	535	0.08	6.58	-35.6				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, GOLDEN/YELLOW TINT, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17.0	535	0.08	6.59	-36.2				
2	17.0	535	0.08	6.59	-36.8				
3	17.0	535	0.08	6.59	-37.6				
4	17.0	535	0.08	6.59	-37.9				
Average:	17.0	535	0.08	6.59	-37.1	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
2	<u>Methane Ethane Ethene Acetylene</u>
	others

Duplicate Sample No(s): Duplicate location (DUP1)
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1200
 Sample Number: BDC-DUP1180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) _____ Time: _____ Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ End Purge: Date/Time: 5/ 1 /2018 @ Gallons Purged: _____
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	

SEE MW-9A SCF FOR PURGE DATA

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type _____
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, GOLDEN/YELLOW TINT, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17.0	535	0.08	6.59	-36.5				
2	17.0	535	0.08	6.59	-37.0				
3	17.0	535	0.08	6.59	-37.8				
4	17.0	535	0.08	6.59	-38.0				
Average:	17.0	535.0	0.08	6.59	-37.3	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/> (8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: DUPLICATE TO MW-9A
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1421
 Sample Number: MW-10C- 180501 Weather: 50'S, PARTLY SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.39 Time: 1353 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1358 End Purge: Date/Time: 5/ 1 /2018 @ 1419 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1401	18.9	557.0	0.26	6.51	8.5	LOW	12.41	<0.25	
1404	18.7	563.0	0.18	6.50	1.9		12.41	<0.25	
1407	17.9	551.0	0.13	6.47	-1.1		12.41	<0.25	
1410	17.5	538.0	0.13	6.45	-1.7			0.25	
1413	17.3	530.0	0.13	6.43	-1.9				
1416	17.1	509.0	0.12	5.39	-2.6				
1418	17.0	497.4	0.12	6.37	-3.6				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____

Sample Description (color, turbidity, odor, sheen, etc.): CLEAR WITH SUSPENDED SOLIDS, GOLDEN/YELLOW TINT, SLIGHT INJECTION FLUID ODC (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	16.9	496.7	0.12	6.36	-3.7				
2	16.9	495.6	0.12	6.36	-3.8				
3	16.9	494.4	0.12	6.36	-3.9				
4	16.9	493.8	0.13	6.36	-4.0				
Average:	16.9	495.1	0.12	6.36	-3.9	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/> (8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/> (pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F) (COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2) (Total Cyanide) (WAD Cyanide) (Free Cyanide) (Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid) VOC (Boeing short list) Methane Ethane Ethene Acetylene _____ _____ others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1446
 Sample Number: MW-11A- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.39 Time: 1403 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1424 End Purge: Date/Time: 5/ 1 /2018 @ 1434 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1427	17.3	1017	0.12	6.56	-1.5	LOW	12.45	<0.25	
1430	17.2	1017	0.13	6.57	-5.4		12.47		
1433	17.2	1017	0.13	6.58	-9.9		12.49		

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17.2	1017	0.14	6.59	-11.3				
2	17.2	1017	0.15	6.59	-11.5				
3	17.2	1017	0.15	6.59	-11.8				
4	17.2	1017	0.15	6.59	-12.1				
Average:	17.2	1017	0.15	6.59	-11.7	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1006
 Sample Number: MW-13A- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.77 Time: 941 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 944 End Purge: Date/Time: 5/ 1 /2018 @ 957 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
947	16.0	258.7	0.45	6.28	88.6	LOW	11.79	<0.25	
950	15.9	258.0	0.51	6.25	85.0		11.79		
953	15.8	259.2	0.51	6.21	82.2		11.79	0.25	
956	15.8	260.3	0.47	6.20	79.8				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.8	260.6	0.48	6.20	79.5				
2	15.8	261.0	0.47	6.20	79.3				
3	15.8	261.5	0.46	6.20	79.1				
4	15.8	261.9	0.46	6.20	79.0				
Average:	15.8	261.3	0.47	6.20	79.2	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1026
 Sample Number: MW-13C- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.6 Time: 955 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1002 End Purge: Date/Time: 5/ 1 /2018 @ 1023 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1005	16.2	1131	0.20	6.46	79.2	LOW	11.6	<0.25	
1008	16.3	1131	0.16	6.47	61.3				
1011	16.4	1132	0.14	6.48	37.8		11.6	0.25	
1014	16.4	1133	0.15	6.48	17.6				
1017	16.4	1131	0.17	6.49	-3.4				
1020	16.4	1131	0.17	6.49	-10.7			0.5	
1022	16.4	1131	0.17	6.49	-14.6				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____

Sample Description (color, turbidity, odor, sheen, etc.): CLEAR WITH A FEW SUSPENDED SOLIDS, YELLOWISH TINT, NO/NS (EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	16.4	1131	0.17	6.49	-15.5				
2	16.4	1131	0.17	6.49	-16.2				
3	16.4	1130	0.17	6.49	-16.9				
4	16.4	1130	0.17	6.49	-17.5				
Average:	16.4	1130.5	0.17	6.49	-16.5	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1306
 Sample Number: MW-14C- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.8 Time: 1225 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1242 End Purge: Date/Time: 5/ 1 /2018 @ 1301 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1245	21.1	1002	0.23	6.62	-39.0	LOW	11.83	<0.25	
1248	21.2	991	0.22	6.52	-40.5		11.83		
1251	21.2	966	0.24	6.50	-41.6		11.85	0.25	
1254	21.5	947	0.22	6.49	-42.7				
1257	21.5	932	0.20	6.50	-44.2				
1300	21.4	920	0.20	6.48	-44.3			0.5	

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLOUDY WITH SUSPENDED SOLILDS, COLORLESS, NO/NS (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	21.5	918	0.20	6.48	-44.6				
2	21.5	916	0.19	6.48	-44.7				
3	21.5	915	0.20	6.48	-44.7				
4	21.5	913	0.19	6.48	-44.9				
Average:	21.5	916	0.20	6.48	-44.7	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1326
 Sample Number: MW-15C- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.41 Time: 1249 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1304 End Purge: Date/Time: 5/ 1 /2018 @ 1320 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1307	25.2	1171	1.37	7.28	-68.5	LOW	12.58	<0.25	
1310	24.4	1121	0.46	6.96	-57.6		12.67		TURN DOWN CPM AT LOWEST SETTING
1313	23.9	1088	0.36	6.92	-55.0		12.69	<0.25	
1316	23.7	1069	0.36	6.92	-54.7		12.69		
1319	23.2	1040	0.38	6.90	-53.3				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLOUDY, AMBER COLOR, SLIGHT INJECTION FLUID ODOR/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	23.2	1033	0.38	6.90	-53.1				
2	23.0	1032	0.39	6.90	-53.1				
3	23.0	1030	0.39	6.90	-53.0				
4	23.0	1028	0.38	6.90	-53.0				
Average:	23.1	1031	0.39	6.90	-53.1	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1611
 Sample Number: MW-16A- 180501 Weather: 50'S, PARTLY SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.54 Time: 1539 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1548 End Purge: Date/Time: 5/ 1 /2018 @ 1609 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1551	17.3	3488	0.10	6.95	-73.1	LOW	12.63	<0.25	TURN DOWN PUMP
1554	17.3	3421	0.11	7.01	-93.7		12.71	<0.25	AT LOWEST SETTING
1557	17.1	3387	0.13	7.03	-102.5		12.76		
1600	17.0	3349	0.15	7.05	-114.4				
1603	17.0	3344	0.16	7.06	-118.8				
1606	17.0	3327	0.18	7.06	-124.6				
1608	17.0	3327	0.19	7.06	-127.2				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, AMBER COLOR, SLIGHT INJECTION FLUID ODOR/NS (FOAMY)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17.1	3330	0.19	7.06	-127.6				
2	17.1	3330	0.19	7.07	-127.9				
3	17.1	3331	0.19	7.07	-128.3				
4	17.1	3332	0.19	7.07	-128.6				
Average:	17.1	3331	0.19	7.07	-128.1	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1541
 Sample Number: MW-16C- 180501 Weather: 50'S, PARTLY SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.72 Time: 1515 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1519 End Purge: Date/Time: 5/ 1 /2018 @ 1540 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1522	17.2	628	0.20	6.49	14.8	LOW	12.74	<0.25	
1525	17.3	824	0.10	6.30	9.8		12.74	<0.25	
1528	17.5	747	0.10	6.34	0.9		12.74	0.25	
1531	17.7	661	0.10	6.34	-4.4				
1534	17.7	585	0.12	6.35	-8.2				
1537	17.7	580	0.11	6.36	-9.7			0.5	
1539	18.3	516	0.13	6.42	-20.0				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR WITH SOME SUSPENDED SOLIDS, YELLOW TINT, NO/NS (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	18.3	516	0.13	6.43	-20.7				
2	18.4	515	0.13	6.43	-21.0				
3	18.4	514	0.13	6.43	-21.4				
4	18.5	513	0.13	6.43	-21.7				
Average:	18.4	515	0.13	6.43	-21.2	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1356
 Sample Number: MW-20C- 180501 Weather: 50'S, PARTLY SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.96 Time: 1330 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1333 End Purge: Date/Time: 5/ 1 /2018 @ 1346 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1336	18.2	527	0.46	6.59	-8.2	MED	12.03	<0.25	
1339	18.3	528	0.50	6.59	-9.7		12.05		
1342	18.4	528	0.52	6.59	-10.5		120.5		
1345	18.5	529	0.54	6.59	-12.7				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): SLIGHTLY TURBID, AMBER COLOR, SLIGHT INJECTION FLUID ODOR/NS (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	18.5	529	0.54	6.59	-12.8				
2	18.5	529	0.55	6.59	-12.8				
3	18.6	529	0.54	6.59	-13.1				
4	18.6	530	0.55	6.59	-13.3				
Average:	18.6	529	0.55	6.59	-13.0	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 1 /2018 @ 1236
 Sample Number: MW-22A- 180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.08 Time: 1210 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 1 /2018 @ 1212 End Purge: Date/Time: 5/ 1 /2018 @ 1233 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1215	16.4	2350	0.10	7.18	-9.1	LOW	12.18	<0.25	TURN CPM DOWN
1218	16.3	2345	0.10	7.16	-15.9		12.23		
1221	16.3	2326	0.10	7.16	-26.4		12.23	0.25	
1224	16.2	2292	0.08	7.13	-53.2				
1227	16.1	2262	0.07	7.12	-76.4				
1230	16.1	2255	0.07	7.12	-89.4			0.5	
1232	16.2	2254	0.07	7.12	-92.9				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____

Sample Description (color, turbidity, odor, sheen, etc.): TURBID, AMBER COLOR, STRONG INJECTION FLUID ODOR/NS
 (VERY EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	16.2	2254	0.08	7.12	-93.7				
2	16.2	2254	0.08	7.12	-94.4				
3	16.2	2254	0.08	7.12	-95.0				
4	16.2	2254	0.07	7.12	-95.5				
Average:	16.2	2254	0.08	7.12	-94.7	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018



24 May 2018

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

RE: Boeing Regional GW Developmental Center

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

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

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

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
18E0037	N/A

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

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

Analytical Resources, Inc.

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





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

Chain-of-Custody Record

Date 5/1/18
Page 1 of 1

187
18D 18E0037

Project Name <u>DC Regional Gw</u> Project No. <u>0025217-091-039</u>					Testing Parameters					Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____	
Project Location/Event <u>Summ-20 / May 2018</u>					<u>VOCs (5260C)</u> <u>MEP (2510C)</u> <u>TOL (SM5310C)</u> <u>SulRate (E300C)</u>						
Sampler's Name <u>Seovani Huerta</u>											
Project Contact <u>Chris Kimmel & Jen Parsons</u>											
Send Results To <u>ckimmel & JParsons</u>											
Sample I.D.	Date	Time	Matrix	No. of Containers							Observations/Comments
MW-13A-180501	5/1/18	1006	AQ	3	X						<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPh-Dx - run acid wash silica gel cleanup
MW-13C-180501	5/1/18	1026	AQ	3	X						
MW-6B-180501	5/1/18	1106	AQ	7	X	X	X	X			<input type="checkbox"/> Analyze for EPH if no specific product identified
MW-6A-180501	5/1/18	1151	AQ	7	X	X	X	X			
BDC-Dup1-180501	5/1/18	1200	AQ	7	X	X	X	X			VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered
MW-22A-180501	5/1/18	1236	AQ	7	X	X	X	X			
MW-14C-180501	5/1/18	1306	AQ	3	X						Other <input checked="" type="checkbox"/> Methane, Ethane <input type="checkbox"/> Ethene
MW-15C-180501	5/1/18	1326	AQ	3	X						
MW-20C-180501	5/1/18	1356	AQ	3	X						
MW-10C-180501	5/1/18	1421	AQ	3	X						
MW-11A-180501	5/1/18	1446	AQ	3	X						
MW-9A-180501	5/1/18	1506	AQ	7	X	X	X	X			
MW-16C-180501	5/1/18	1541	AQ	3	X						
MW-16A-180501	5/1/18	1611	AQ	3	X						
Trip blanks	-	-	AQ	2	X						

Special Shipment/Handling or Storage Requirements <u>on ice</u>	Method of Shipment <u>lab pick up</u>
---	---------------------------------------

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Seovani Huerta</u> Company <u>Landau Associates</u> Date <u>5/1/18</u> Time <u>1845</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Jacob Walte</u> Company <u>ART</u> Date <u>05/02/18</u> Time <u>1023</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
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The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-13A-180501	18E0037-01	Water	01-May-2018 10:06	02-May-2018 15:45
MW-13C-180501	18E0037-02	Water	01-May-2018 10:26	02-May-2018 15:45
MW-6B-180501	18E0037-03	Water	01-May-2018 11:06	02-May-2018 15:45
MW-6A-180501	18E0037-04	Water	01-May-2018 11:51	02-May-2018 15:45
BDC-Dup1-180501	18E0037-05	Water	01-May-2018 12:00	02-May-2018 15:45
MW-22A-180501	18E0037-06	Water	01-May-2018 12:36	02-May-2018 15:45
MW-14C-180501	18E0037-07	Water	01-May-2018 13:06	02-May-2018 15:45
MW-15C-180501	18E0037-08	Water	01-May-2018 13:26	02-May-2018 15:45
MW-20C-180501	18E0037-09	Water	01-May-2018 13:56	02-May-2018 15:45
MW-10C-180501	18E0037-10	Water	01-May-2018 14:21	02-May-2018 15:45
MW-11A-180501	18E0037-11	Water	01-May-2018 14:46	02-May-2018 15:45
MW-9A-180501	18E0037-12	Water	01-May-2018 15:06	02-May-2018 15:45
MW-16C-180501	18E0037-13	Water	01-May-2018 15:41	02-May-2018 15:45
MW-16A-180501	18E0037-14	Water	01-May-2018 16:11	02-May-2018 15:45
Tripblanks	18E0037-15	Water	01-May-2018 10:06	02-May-2018 15:45



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Case Narrative

Volatiles - EPA Method SW8260C

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

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

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

The LCS/LCSD percent recoveries and RPD were within control limits.

Sample 18E0037-15 was analyzed from a vial that contained a peabubble, sample 18E0037-03 contained a small bubble and sample 18E0037-04 contained a large air bubble.

Wet Chemistry

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

Initial and continuing calibrations were within method requirements.

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

The LCS percent recoveries were within control limits.

Per the COC request the samples were allowed to settle and sample aliquot was collected from the clear portion.

Volatile Gases - MEE by RSK175

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

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

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



WORK ORDER

18E0037

Client: The Boeing Company [Developmental Center] Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center Project Number: 0025217.099.039

Preservation Confirmation

Container ID	Container Type	pH
18E0037-01 A	VOA Vial, Clear, 40 mL, HCL	
18E0037-01 B	VOA Vial, Clear, 40 mL, HCL	
18E0037-01 C	VOA Vial, Clear, 40 mL, HCL	
18E0037-02 A	VOA Vial, Clear, 40 mL, HCL	
18E0037-02 B	VOA Vial, Clear, 40 mL, HCL	
18E0037-02 C	VOA Vial, Clear, 40 mL, HCL	
18E0037-03 A	VOA Vial, Clear, 40 mL, HCL	
18E0037-03 B	VOA Vial, Clear, 40 mL, HCL	
18E0037-03 C	VOA Vial, Clear, 40 mL, HCL	
18E0037-03 D	VOA Vial, Clear, 40 mL, HCL	
18E0037-03 E	VOA Vial, Clear, 40 mL, HCL	
18E0037-03 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2 P
18E0037-03 G	Small OJ, 500 mL	
18E0037-04 A	b VOA Vial, Clear, 40 mL, HCL	
18E0037-04 B	b VOA Vial, Clear, 40 mL, HCL	
18E0037-04 C	VOA Vial, Clear, 40 mL, HCL	
18E0037-04 D	VOA Vial, Clear, 40 mL, HCL	
18E0037-04 E	VOA Vial, Clear, 40 mL, HCL	
18E0037-04 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2 P
18E0037-04 G	Small OJ, 500 mL	
18E0037-05 A	VOA Vial, Clear, 40 mL, HCL	
18E0037-05 B	VOA Vial, Clear, 40 mL, HCL	
18E0037-05 C	b VOA Vial, Clear, 40 mL, HCL	
18E0037-05 D	b VOA Vial, Clear, 40 mL, HCL	
18E0037-05 E	b VOA Vial, Clear, 40 mL, HCL	
18E0037-05 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2 P
18E0037-05 G	Small OJ, 500 mL	
18E0037-06 A	VOA Vial, Clear, 40 mL, HCL	
18E0037-06 B	VOA Vial, Clear, 40 mL, HCL	
18E0037-06 C	b VOA Vial, Clear, 40 mL, HCL	
18E0037-06 D	b VOA Vial, Clear, 40 mL, HCL	
18E0037-06 E	b VOA Vial, Clear, 40 mL, HCL	
18E0037-06 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2 P
18E0037-06 G	Small OJ, 500 mL	
18E0037-07 A	VOA Vial, Clear, 40 mL, HCL	



WORK ORDER

18E0037

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: 0025217.099.039

18E0037-07 B	VOA Vial, Clear, 40 mL, HCL
18E0037-07 C	VOA Vial, Clear, 40 mL, HCL
18E0037-08 A	VOA Vial, Clear, 40 mL, HCL
18E0037-08 B	VOA Vial, Clear, 40 mL, HCL
18E0037-08 C	VOA Vial, Clear, 40 mL, HCL
18E0037-09 A	VOA Vial, Clear, 40 mL, HCL
18E0037-09 B	VOA Vial, Clear, 40 mL, HCL
18E0037-09 C	VOA Vial, Clear, 40 mL, HCL
18E0037-10 A	VOA Vial, Clear, 40 mL, HCL
18E0037-10 B	VOA Vial, Clear, 40 mL, HCL
18E0037-10 C <i>b</i>	VOA Vial, Clear, 40 mL, HCL
18E0037-11 A	VOA Vial, Clear, 40 mL, HCL
18E0037-11 B	VOA Vial, Clear, 40 mL, HCL
18E0037-11 C	VOA Vial, Clear, 40 mL, HCL
18E0037-12 A	VOA Vial, Clear, 40 mL, HCL
18E0037-12 B	VOA Vial, Clear, 40 mL, HCL
18E0037-12 C	VOA Vial, Clear, 40 mL, HCL
18E0037-12 D	VOA Vial, Clear, 40 mL, HCL
18E0037-12 E	VOA Vial, Clear, 40 mL, HCL
18E0037-12 F	Glass NM, Amber, 250 mL, 9N H2SO4 <i>L2 p</i>
18E0037-12 G	Small OJ, 500 mL
18E0037-13 A	VOA Vial, Clear, 40 mL, HCL
18E0037-13 B	VOA Vial, Clear, 40 mL, HCL
18E0037-13 C <i>b</i>	VOA Vial, Clear, 40 mL, HCL
18E0037-14 A	VOA Vial, Clear, 40 mL, HCL
18E0037-14 B	VOA Vial, Clear, 40 mL, HCL
18E0037-14 C <i>b</i>	VOA Vial, Clear, 40 mL, HCL
18E0037-15 A <i>b</i>	VOA Vial, Clear, 40 mL, HCL
18E0037-15 B <i>b</i>	VOA Vial, Clear, 40 mL, HCL

Preservation Confirmed By BF

Date 5/2/18

*b = bubble
p = pass*



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: London Edwards
 COC No(s): _____ NA
 Assigned ARI Job No: 18E0037

Project Name: _____
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ NA

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
 Time: 1736

If cooler temperature is out of compliance fill out form 00070F cooler # 0.5°C - 0.1°C Temp Gun ID#: 2005206

Cooler Accepted by: JM Date: 05/02/18 Time: 1023

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? NA YES NO
 Were all bottles sealed in individual plastic bags? YES NO
 Did all bottles arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? YES NO
 Did the number of containers listed on COC match with the number of containers received? YES NO
 Did all bottle labels and tags agree with custody papers? YES NO
 Were all bottles used correct for the requested analyses? YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO
 Date VOC Trip Blank was made at ARI... NA 4/25/18
 Was Sample Split by ARI : NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: BF Date: 5/2/18 Time: 1541

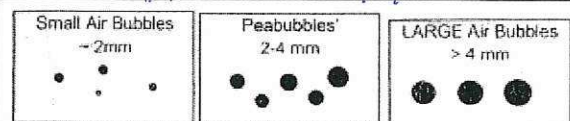
**** Notify Project Manager of discrepancies or concerns ****

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

Additional Notes, Discrepancies, & Resolutions:

air bubble list on pres sheet

By: BF Date: 5/2/18



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



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-13A-180501
18E0037-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 10:06

Instrument: NT3

Analyzed: 03-May-2018 15:05

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0103 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.43	ug/L	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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24-May-2018 11:44

MW-13A-180501
18E0037-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 10:06

Instrument: NT3

Analyzed: 03-May-2018 15:05

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	1.45	ug/L	
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.8	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	94.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	108	%	



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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-13C-180501
18E0037-02 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 10:26

Instrument: NT3

Analyzed: 03-May-2018 15:31

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0103 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.25	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	6.91	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.28	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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24-May-2018 11:44

MW-13C-180501
18E0037-02 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 10:26

Instrument: NT3

Analyzed: 03-May-2018 15:31

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	0.24	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	25.1	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	
Surrogate: Toluene-d8			80-120 %	97.7	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	93.0	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	109	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-6B-180501
18E0037-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 11:06

Instrument: NT3

Analyzed: 04-May-2018 13:28

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 1 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	5.00	ND	ug/L	U
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
Bromomethane	74-83-9	1	10.0	ND	ug/L	U
Chloroethane	75-00-3	1	2.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	2.00	ND	ug/L	U
Acrolein	107-02-8	1	50.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	2.00	ND	ug/L	U
Acetone	67-64-1	1	50.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	2.00	ND	ug/L	U
Bromoethane	74-96-4	1	2.00	ND	ug/L	U
Iodomethane	74-88-4	1	10.0	ND	ug/L	U
Methylene Chloride	75-09-2	1	10.0	ND	ug/L	U
Acrylonitrile	107-13-1	1	10.0	ND	ug/L	U
Carbon Disulfide	75-15-0	1	2.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	2.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	2.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	2.00	ND	ug/L	U
2-Butanone	78-93-3	1	50.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	ND	ug/L	U
Chloroform	67-66-3	1	2.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	2.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	2.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	2.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	2.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	2.00	ND	ug/L	U
Benzene	71-43-2	1	2.00	ND	ug/L	U
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	2.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	2.00	ND	ug/L	U
Dibromomethane	74-95-3	1	2.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	50.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	2.00	ND	ug/L	U
Toluene	108-88-3	1	2.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	2.00	ND	ug/L	U
2-Hexanone	591-78-6	1	50.0	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
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Reported:
24-May-2018 11:44

MW-6B-180501
18E0037-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 11:06

Instrument: NT3

Analyzed: 04-May-2018 13:28

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	2.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	2.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	2.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	2.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	2.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	2.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	4.00	ND	ug/L	U
o-Xylene	95-47-6	1	2.00	ND	ug/L	U
Styrene	100-42-5	1	2.00	ND	ug/L	U
Bromoform	75-25-2	1	2.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	2.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	5.00	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	10.0	ND	ug/L	U
n-Propylbenzene	103-65-1	1	2.00	ND	ug/L	U
Bromobenzene	108-86-1	1	2.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	2.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	2.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	2.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	2.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	2.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	2.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	2.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	2.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	2.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	2.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	2.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	2.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	5.00	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	5.00	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	5.00	ND	ug/L	U
Naphthalene	91-20-3	1	5.00	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	98.4	%	
Surrogate: Toluene-d8			80-120 %	99.2	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	92.3	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	105	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-6B-180501
18E0037-03 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 11:06

Instrument: FID6

Analyzed: 08-May-2018 11:10

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	9830	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	92.6	%	



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Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-6B-180501
18E0037-03RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 11:06

Instrument: FID6

Analyzed: 08-May-2018 13:42

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 1 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	5370	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	106	%	



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Reported:
24-May-2018 11:44

MW-6B-180501
18E0037-03RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 11:06

Instrument: DX500

Analyzed: 09-May-2018 19:06

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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PO Box 3703 MS 2R-96
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Reported:
24-May-2018 11:44

MW-6B-180501
18E0037-03RE1 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/01/2018 11:06

Instrument: TOC-LCSH

Analyzed: 03-May-2018 18:59

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0091 Sample Size: 20 mL
Prepared: 03-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		50	25.00	25.00	4147	mg/L	D



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Reported:
24-May-2018 11:44

MW-6A-180501
18E0037-04 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 11:51

Instrument: NT3

Analyzed: 04-May-2018 13:57

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 1 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	5.00	ND	ug/L	U
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
Bromomethane	74-83-9	1	10.0	ND	ug/L	U
Chloroethane	75-00-3	1	2.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	2.00	ND	ug/L	U
Acrolein	107-02-8	1	50.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	2.00	ND	ug/L	U
Acetone	67-64-1	1	50.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	2.00	ND	ug/L	U
Bromoethane	74-96-4	1	2.00	ND	ug/L	U
Iodomethane	74-88-4	1	10.0	ND	ug/L	U
Methylene Chloride	75-09-2	1	10.0	ND	ug/L	U
Acrylonitrile	107-13-1	1	10.0	ND	ug/L	U
Carbon Disulfide	75-15-0	1	2.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	2.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	2.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	2.00	ND	ug/L	U
2-Butanone	78-93-3	1	50.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	ND	ug/L	U
Chloroform	67-66-3	1	2.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	2.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	2.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	2.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	2.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	2.00	ND	ug/L	U
Benzene	71-43-2	1	2.00	ND	ug/L	U
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	2.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	2.00	ND	ug/L	U
Dibromomethane	74-95-3	1	2.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	50.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	2.00	ND	ug/L	U
Toluene	108-88-3	1	2.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	2.00	ND	ug/L	U
2-Hexanone	591-78-6	1	50.0	ND	ug/L	U



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Reported:
24-May-2018 11:44

MW-6A-180501
18E0037-04 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 11:51

Instrument: NT3

Analyzed: 04-May-2018 13:57

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	2.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	2.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	2.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	2.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	2.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	2.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	4.00	ND	ug/L	U
o-Xylene	95-47-6	1	2.00	ND	ug/L	U
Styrene	100-42-5	1	2.00	ND	ug/L	U
Bromoform	75-25-2	1	2.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	2.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	5.00	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	10.0	ND	ug/L	U
n-Propylbenzene	103-65-1	1	2.00	ND	ug/L	U
Bromobenzene	108-86-1	1	2.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	2.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	2.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	2.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	2.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	2.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	2.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	2.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	2.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	2.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	2.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	2.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	2.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	5.00	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	5.00	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	5.00	ND	ug/L	U
Naphthalene	91-20-3	1	5.00	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	102	%	
Surrogate: Toluene-d8			80-120 %	97.1	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	96.2	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	102	%	



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

Project: Boeing Regional GW Developmental Center
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Reported:
24-May-2018 11:44

MW-6A-180501
18E0037-04 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 11:51

Instrument: FID6

Analyzed: 08-May-2018 11:24

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	6130	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	81.2	%	



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Reported:
24-May-2018 11:44

MW-6A-180501
18E0037-04 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/01/2018 11:51

Instrument: TOC-LCSH

Analyzed: 03-May-2018 17:05

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0091
Prepared: 03-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		10	5.00	5.00	149.3	mg/L	D



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

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Reported:
24-May-2018 11:44

MW-6A-180501
18E0037-04RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 11:51

Instrument: DX500

Analyzed: 10-May-2018 18:38

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.342	mg/L	



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Seattle WA, 98124

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Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

BDC-Dup1-180501
18E0037-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 12:00

Instrument: NT3

Analyzed: 03-May-2018 16:53

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0103 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	1.28	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.22	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.33	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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Reported:
24-May-2018 11:44

BDC-Dup1-180501
18E0037-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 12:00

Instrument: NT3

Analyzed: 03-May-2018 16:53

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	0.51	ug/L	
o-Xylene	95-47-6	1	0.20	0.45	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	0.37	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	89.4	ug/L	E
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	107	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

BDC-Dup1-180501
18E0037-05 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 12:00

Instrument: FID6

Analyzed: 08-May-2018 11:37

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	13600	ug/L	E
Ethane	74-84-0	1	1.23	815	ug/L	
Ethene	74-85-1	1	1.14	8.03	ug/L	
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	92.6	%	



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PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
24-May-2018 11:44

5

18E0037-05 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/01/2018 12:00

Instrument: TOC-LCSH

Analyzed: 03-May-2018 17:37

Sample Preparation:

Preparation Method: No Prep Wet Chem

Preparation Batch: BGE0091

Prepared: 03-May-2018

Sample Size: 20 mL

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		5	2.50	2.50	25.21	mg/L	D



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Seattle WA, 98124

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Reported:
24-May-2018 11:44

BDC-Dup1-180501
18E0037-05RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 12:00

Instrument: NT3

Analyzed: 04-May-2018 19:12

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 2 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	2.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	1.00	2.47	ug/L	
Bromomethane	74-83-9	1	5.00	ND	ug/L	U
Chloroethane	75-00-3	1	1.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	1.00	ND	ug/L	U
Acrolein	107-02-8	1	25.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	1.00	ND	ug/L	U
Acetone	67-64-1	1	25.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	1.00	ND	ug/L	U
Bromoethane	74-96-4	1	1.00	ND	ug/L	U
Iodomethane	74-88-4	1	5.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	5.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	5.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	1.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	1.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	1.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	1.00	ND	ug/L	U
2-Butanone	78-93-3	1	25.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	1.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	1.00	ND	ug/L	U
Chloroform	67-66-3	1	1.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	1.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	1.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	1.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	1.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	1.00	ND	ug/L	U
Benzene	71-43-2	1	1.00	ND	ug/L	U
Trichloroethene	79-01-6	1	1.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	1.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	1.00	ND	ug/L	U
Dibromomethane	74-95-3	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	25.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	1.00	ND	ug/L	U
Toluene	108-88-3	1	1.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	1.00	ND	ug/L	U
2-Hexanone	591-78-6	1	25.0	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

BDC-Dup1-180501
18E0037-05RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 12:00

Instrument: NT3

Analyzed: 04-May-2018 19:12

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	1.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	1.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	1.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	1.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	1.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	1.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	1.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	1.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	2.00	ND	ug/L	U
o-Xylene	95-47-6	1	1.00	ND	ug/L	U
Styrene	100-42-5	1	1.00	ND	ug/L	U
Bromoform	75-25-2	1	1.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	1.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	2.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	5.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	1.00	ND	ug/L	U
Bromobenzene	108-86-1	1	1.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	1.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	1.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	1.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	1.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	1.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	1.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	1.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	1.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	1.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	2.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	2.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.50	ND	ug/L	U
Naphthalene	91-20-3	1	2.50	80.7	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	2.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	
Surrogate: Toluene-d8			80-120 %	94.8	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	93.6	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	105	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

BDC-Dup1-180501
18E0037-05RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 12:00

Instrument: FID6

Analyzed: 08-May-2018 12:47

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 1 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	15300	ug/L	
Ethane	74-84-0	1	12.3	909	ug/L	
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	98.4	%	



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

BDC-Dup1-180501
18E0037-05RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 12:00

Instrument: DX500

Analyzed: 10-May-2018 18:55

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-22A-180501
18E0037-06 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 12:36

Instrument: NT3

Analyzed: 03-May-2018 17:21

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0103 Sample Size: 1 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	5.00	ND	ug/L	U
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
Bromomethane	74-83-9	1	10.0	ND	ug/L	U
Chloroethane	75-00-3	1	2.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	2.00	ND	ug/L	U
Acrolein	107-02-8	1	50.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	2.00	ND	ug/L	U
Acetone	67-64-1	1	50.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	2.00	ND	ug/L	U
Bromoethane	74-96-4	1	2.00	ND	ug/L	U
Iodomethane	74-88-4	1	10.0	ND	ug/L	U
Methylene Chloride	75-09-2	1	10.0	ND	ug/L	U
Acrylonitrile	107-13-1	1	10.0	ND	ug/L	U
Carbon Disulfide	75-15-0	1	2.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	2.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	2.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	2.00	ND	ug/L	U
2-Butanone	78-93-3	1	50.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	ND	ug/L	U
Chloroform	67-66-3	1	2.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	2.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	2.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	2.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	2.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	2.00	ND	ug/L	U
Benzene	71-43-2	1	2.00	ND	ug/L	U
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	2.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	2.00	ND	ug/L	U
Dibromomethane	74-95-3	1	2.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	50.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	2.00	ND	ug/L	U
Toluene	108-88-3	1	2.00	2.08	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	2.00	ND	ug/L	U
2-Hexanone	591-78-6	1	50.0	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-22A-180501
18E0037-06 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 12:36

Instrument: NT3

Analyzed: 03-May-2018 17:21

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	2.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	2.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	2.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	2.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	2.00	3.74	ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	1	2.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	4.00	4.59	ug/L	
o-Xylene	95-47-6	1	2.00	3.85	ug/L	
Styrene	100-42-5	1	2.00	ND	ug/L	U
Bromoform	75-25-2	1	2.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	2.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	5.00	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	10.0	ND	ug/L	U
n-Propylbenzene	103-65-1	1	2.00	ND	ug/L	U
Bromobenzene	108-86-1	1	2.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	2.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	2.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	2.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	2.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	2.00	2.09	ug/L	
1,2,4-Trimethylbenzene	95-63-6	1	2.00	6.62	ug/L	
s-Butylbenzene	135-98-8	1	2.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	2.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	2.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	2.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	2.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	2.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	5.00	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	5.00	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	5.00	ND	ug/L	U
Naphthalene	91-20-3	1	5.00	608	ug/L	
1,2,3-Trichlorobenzene	87-61-6	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	
Surrogate: Toluene-d8			80-120 %	97.5	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	101	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	106	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-22A-180501
18E0037-06 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 12:36

Instrument: FID6

Analyzed: 08-May-2018 11:51

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	11500	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	66.9	%	*



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: 0025217.099.039 Project Manager: Jennifer Parsons	Reported: 24-May-2018 11:44
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MW-22A-180501
18E0037-06 (Water)

Wet Chemistry

Method: SM 5310 B-00 Sampled: 05/01/2018 12:36

Instrument: TOC-LCSH Analyzed: 03-May-2018 18:05

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0091 Sample Size: 20 mL
Prepared: 03-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		10	5.00	5.00	297.2	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
24-May-2018 11:44

MW-22A-180501
18E0037-06RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 12:36

Instrument: FID6

Analyzed: 08-May-2018 13:00

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 1 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	18800	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	101	%	



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: 0025217.099.039 Project Manager: Jennifer Parsons	Reported: 24-May-2018 11:44
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MW-22A-180501
18E0037-06RE1 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/01/2018 12:36

Instrument: DX500 Analyzed: 09-May-2018 19:57

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178 Sample Size: 5 mL
Prepared: 07-May-2018 Final Volume: 5 mL

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



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-14C-180501
18E0037-07 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 13:06

Instrument: NT3

Analyzed: 04-May-2018 14:23

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 10 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.23	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.22	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
24-May-2018 11:44

MW-14C-180501
18E0037-07 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 13:06

Instrument: NT3

Analyzed: 04-May-2018 14:23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	102	%	
Surrogate: Toluene-d8			80-120 %	97.2	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	95.3	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	111	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-15C-180501
18E0037-08 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 13:26

Instrument: NT3

Analyzed: 04-May-2018 14:50

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 1 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	5.00	ND	ug/L	U
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
Bromomethane	74-83-9	1	10.0	ND	ug/L	U
Chloroethane	75-00-3	1	2.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	2.00	ND	ug/L	U
Acrolein	107-02-8	1	50.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	2.00	ND	ug/L	U
Acetone	67-64-1	1	50.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	2.00	ND	ug/L	U
Bromoethane	74-96-4	1	2.00	ND	ug/L	U
Iodomethane	74-88-4	1	10.0	ND	ug/L	U
Methylene Chloride	75-09-2	1	10.0	ND	ug/L	U
Acrylonitrile	107-13-1	1	10.0	ND	ug/L	U
Carbon Disulfide	75-15-0	1	2.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	2.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	2.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	2.00	ND	ug/L	U
2-Butanone	78-93-3	1	50.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	ND	ug/L	U
Chloroform	67-66-3	1	2.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	2.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	2.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	2.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	2.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	2.00	ND	ug/L	U
Benzene	71-43-2	1	2.00	ND	ug/L	U
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	2.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	2.00	ND	ug/L	U
Dibromomethane	74-95-3	1	2.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	50.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	2.00	ND	ug/L	U
Toluene	108-88-3	1	2.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	2.00	ND	ug/L	U
2-Hexanone	591-78-6	1	50.0	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
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Reported:
24-May-2018 11:44

MW-15C-180501
18E0037-08 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 13:26

Instrument: NT3

Analyzed: 04-May-2018 14:50

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	2.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	2.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	2.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	2.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	2.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	2.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	4.00	ND	ug/L	U
o-Xylene	95-47-6	1	2.00	ND	ug/L	U
Styrene	100-42-5	1	2.00	ND	ug/L	U
Bromoform	75-25-2	1	2.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	2.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	5.00	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	10.0	ND	ug/L	U
n-Propylbenzene	103-65-1	1	2.00	ND	ug/L	U
Bromobenzene	108-86-1	1	2.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	2.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	2.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	2.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	2.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	2.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	2.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	2.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	2.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	2.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	2.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	2.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	2.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	5.00	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	5.00	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	5.00	ND	ug/L	U
Naphthalene	91-20-3	1	5.00	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	
Surrogate: Toluene-d8			80-120 %	94.7	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	91.8	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	104	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-20C-180501
18E0037-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 13:56

Instrument: NT3

Analyzed: 04-May-2018 15:17

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 10 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	1.09	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.33	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
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Reported:
24-May-2018 11:44

MW-20C-180501
18E0037-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 13:56

Instrument: NT3

Analyzed: 04-May-2018 15:17

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	104	%	
Surrogate: Toluene-d8			80-120 %	95.8	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	96.1	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	106	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-10C-180501
18E0037-10 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 14:21

Instrument: NT3

Analyzed: 03-May-2018 19:06

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0103 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.39	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	5.76	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.55	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.25	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
24-May-2018 11:44

MW-10C-180501
18E0037-10 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 14:21

Instrument: NT3

Analyzed: 03-May-2018 19:06

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	4.27	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	105	%	
Surrogate: Toluene-d8			80-120 %	98.3	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	94.4	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	108	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-11A-180501
18E0037-11 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 14:46

Instrument: NT3

Analyzed: 04-May-2018 15:42

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 10 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	0.35	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	6.56	ug/L	
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.35	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	11.8	ug/L	
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.26	ug/L	
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
24-May-2018 11:44

MW-11A-180501
18E0037-11 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 14:46

Instrument: NT3

Analyzed: 04-May-2018 15:42

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	0.26	ug/L	
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	98.9	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	95.7	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.5	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-9A-180501
18E0037-12 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 15:06

Instrument: NT3

Analyzed: 04-May-2018 16:09

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 10 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	2.23	ug/L	
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	0.21	ug/L	
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.32	ug/L	
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-9A-180501
18E0037-12 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 15:06

Instrument: NT3

Analyzed: 04-May-2018 16:09

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	0.54	ug/L	
o-Xylene	95-47-6	1	0.20	0.48	ug/L	
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	0.41	ug/L	
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	92.3	ug/L	E
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	94.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.5	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	107	%	



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-9A-180501
18E0037-12 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 15:06

Instrument: FID6

Analyzed: 08-May-2018 13:14

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082
Prepared: 08-May-2018

Sample Size: 10 mL
Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	10800	ug/L	E
Ethane	74-84-0	1	1.23	575	ug/L	
Ethene	74-85-1	1	1.14	3.54	ug/L	
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			<i>72-122 %</i>	<i>97.7</i>	<i>%</i>	



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: 0025217.099.039 Project Manager: Jennifer Parsons	Reported: 24-May-2018 11:44
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5
18E0037-12 (Water)

Wet Chemistry

Method: SM 5310 B-00 Sampled: 05/01/2018 15:06

Instrument: TOC-LCSH Analyzed: 03-May-2018 18:37

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0091 Sample Size: 20 mL
Prepared: 03-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		5	2.50	2.50	25.22	mg/L	D



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
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Reported:
24-May-2018 11:44

MW-9A-180501
18E0037-12RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 15:06

Instrument: NT2

Analyzed: 07-May-2018 13:42

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0157 Sample Size: 2 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	2.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	1.00	2.21	ug/L	
Bromomethane	74-83-9	1	5.00	ND	ug/L	U
Chloroethane	75-00-3	1	1.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	1.00	ND	ug/L	U
Acrolein	107-02-8	1	25.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	1.00	ND	ug/L	U
Acetone	67-64-1	1	25.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	1.00	ND	ug/L	U
Bromoethane	74-96-4	1	1.00	ND	ug/L	U
Iodomethane	74-88-4	1	5.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	5.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	5.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	1.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	1.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	1.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	1.00	ND	ug/L	U
2-Butanone	78-93-3	1	25.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	1.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	1.00	ND	ug/L	U
Chloroform	67-66-3	1	1.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	1.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	1.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	1.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	1.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	1.00	ND	ug/L	U
Benzene	71-43-2	1	1.00	ND	ug/L	U
Trichloroethene	79-01-6	1	1.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	1.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	1.00	ND	ug/L	U
Dibromomethane	74-95-3	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	25.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	1.00	ND	ug/L	U
Toluene	108-88-3	1	1.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	1.00	ND	ug/L	U
2-Hexanone	591-78-6	1	25.0	ND	ug/L	U



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-9A-180501
18E0037-12RE1 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 15:06

Instrument: NT2

Analyzed: 07-May-2018 13:42

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	1.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	1.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	1.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	1.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	1.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	1.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	1.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	1.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	2.00	ND	ug/L	U
o-Xylene	95-47-6	1	1.00	ND	ug/L	U
Styrene	100-42-5	1	1.00	ND	ug/L	U
Bromoform	75-25-2	1	1.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	1.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	2.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	5.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	1.00	ND	ug/L	U
Bromobenzene	108-86-1	1	1.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	1.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	1.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	1.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	1.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	1.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	1.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	1.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	1.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	1.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	2.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	2.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	2.50	ND	ug/L	U
Naphthalene	91-20-3	1	2.50	90.7	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	2.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	98.4	%	
Surrogate: Toluene-d8			80-120 %	95.7	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	90.8	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	104	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-9A-180501
18E0037-12RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/01/2018 15:06

Instrument: FID6

Analyzed: 08-May-2018 13:28

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0082 Sample Size: 1 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	14900	ug/L	
Ethane	74-84-0	1	12.3	750	ug/L	
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	105	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-9A-180501
18E0037-12RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 15:06

Instrument: DX500

Analyzed: 10-May-2018 19:12

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.107	mg/L	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-16C-180501
18E0037-13 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 15:41

Instrument: NT2

Analyzed: 07-May-2018 12:56

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0157 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	0.27	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

MW-16C-180501
18E0037-13 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 15:41

Instrument: NT2

Analyzed: 07-May-2018 12:56

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	92.4	%	
Surrogate: Toluene-d8			80-120 %	95.1	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	95.9	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	104	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
24-May-2018 11:44

MW-16A-180501
18E0037-14 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 16:11

Instrument: NT2

Analyzed: 07-May-2018 13:19

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0157 Sample Size: 1 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	5.00	ND	ug/L	U
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
Bromomethane	74-83-9	1	10.0	ND	ug/L	U
Chloroethane	75-00-3	1	2.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	2.00	ND	ug/L	U
Acrolein	107-02-8	1	50.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	2.00	ND	ug/L	U
Acetone	67-64-1	1	50.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	2.00	ND	ug/L	U
Bromoethane	74-96-4	1	2.00	ND	ug/L	U
Iodomethane	74-88-4	1	10.0	ND	ug/L	U
Methylene Chloride	75-09-2	1	10.0	ND	ug/L	U
Acrylonitrile	107-13-1	1	10.0	ND	ug/L	U
Carbon Disulfide	75-15-0	1	2.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	2.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	2.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	2.00	ND	ug/L	U
2-Butanone	78-93-3	1	50.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	ND	ug/L	U
Chloroform	67-66-3	1	2.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	2.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	2.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	2.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	2.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	2.00	ND	ug/L	U
Benzene	71-43-2	1	2.00	ND	ug/L	U
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	2.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	2.00	ND	ug/L	U
Dibromomethane	74-95-3	1	2.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	50.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	2.00	ND	ug/L	U
Toluene	108-88-3	1	2.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	2.00	ND	ug/L	U
2-Hexanone	591-78-6	1	50.0	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
24-May-2018 11:44

MW-16A-180501
18E0037-14 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 16:11

Instrument: NT2

Analyzed: 07-May-2018 13:19

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	2.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	2.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	2.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	2.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	2.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	2.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	4.00	ND	ug/L	U
o-Xylene	95-47-6	1	2.00	ND	ug/L	U
Styrene	100-42-5	1	2.00	ND	ug/L	U
Bromoform	75-25-2	1	2.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	2.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	5.00	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	10.0	ND	ug/L	U
n-Propylbenzene	103-65-1	1	2.00	ND	ug/L	U
Bromobenzene	108-86-1	1	2.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	2.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	2.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	2.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	2.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	2.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	2.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	2.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	2.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	2.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	2.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	2.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	2.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	5.00	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	5.00	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	5.00	ND	ug/L	U
Naphthalene	91-20-3	1	5.00	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	96.4	%	
Surrogate: Toluene-d8			80-120 %	95.8	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	95.3	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	103	%	



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Reported:
24-May-2018 11:44

Tripblanks
18E0037-15 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 10:06

Instrument: NT3

Analyzed: 04-May-2018 12:36

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0132 Sample Size: 10 mL
Prepared: 04-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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Reported:
24-May-2018 11:44

Triplanks
18E0037-15 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 10:06

Instrument: NT3

Analyzed: 04-May-2018 12:36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	
Surrogate: Toluene-d8			80-120 %	98.8	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	91.4	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	102	%	



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0103 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0103-BLK1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 13:21								
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Bromoethane	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U



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Volatile Organic Compounds - Quality Control

Batch BGE0103 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0103-BLK1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 13:21								
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0103 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0103-BLK1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 13:21								
Surrogate: 1,2-Dichloroethane-d4	5.70		ug/L	5.00		114	80-129			
Surrogate: Toluene-d8	5.14		ug/L	5.00		103	80-120			
Surrogate: 4-Bromofluorobenzene	4.97		ug/L	5.00		99.4	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.40		ug/L	5.00		108	80-120			
LCS (BGE0103-BS1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 10:44								
Chloromethane	8.86	0.50	ug/L	10.0		88.6	60-138			
Vinyl Chloride	8.46	0.20	ug/L	10.0		84.6	66-133			
Bromomethane	9.66	1.00	ug/L	10.0		96.6	72-131			
Chloroethane	8.97	0.20	ug/L	10.0		89.7	60-155			
Trichlorofluoromethane	9.16	0.20	ug/L	10.0		91.6	80-129			
Acrolein	36.2	5.00	ug/L	50.0		72.4	52-144			Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.13	0.20	ug/L	10.0		91.3	76-129			
Acetone	44.7	5.00	ug/L	50.0		89.4	58-142			
1,1-Dichloroethene	9.06	0.20	ug/L	10.0		90.6	69-135			
Bromoethane	9.13	0.20	ug/L	10.0		91.3	78-128			
Iodomethane	9.30	1.00	ug/L	10.0		93.0	56-147			
Methylene Chloride	9.23	1.00	ug/L	10.0		92.3	65-135			
Acrylonitrile	8.36	1.00	ug/L	10.0		83.6	64-134			
Carbon Disulfide	8.89	0.20	ug/L	10.0		88.9	78-125			
trans-1,2-Dichloroethene	9.58	0.20	ug/L	10.0		95.8	78-128			
Vinyl Acetate	8.23	0.20	ug/L	10.0		82.3	55-138			
1,1-Dichloroethane	9.02	0.20	ug/L	10.0		90.2	76-124			
2-Butanone	41.8	5.00	ug/L	50.0		83.7	61-140			
2,2-Dichloropropane	9.12	0.20	ug/L	10.0		91.2	78-125			
cis-1,2-Dichloroethene	9.06	0.20	ug/L	10.0		90.6	80-121			
Chloroform	8.94	0.20	ug/L	10.0		89.4	80-122			
Bromochloromethane	9.20	0.20	ug/L	10.0		92.0	80-121			
1,1,1-Trichloroethane	9.29	0.20	ug/L	10.0		92.9	79-123			
1,1-Dichloropropene	9.46	0.20	ug/L	10.0		94.6	80-120			
Carbon tetrachloride	8.89	0.20	ug/L	10.0		88.9	53-137			
1,2-Dichloroethane	8.31	0.20	ug/L	10.0		83.1	75-123			
Benzene	9.29	0.20	ug/L	10.0		92.9	80-120			
Trichloroethene	8.62	0.20	ug/L	10.0		86.2	80-120			
1,2-Dichloropropane	8.88	0.20	ug/L	10.0		88.8	80-120			



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0103 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0103-BS1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 10:44								
Bromodichloromethane	8.82	0.20	ug/L	10.0		88.2	80-121			
Dibromomethane	8.77	0.20	ug/L	10.0		87.7	80-120			
4-Methyl-2-Pentanone	41.3	5.00	ug/L	50.0		82.6	67-133			
cis-1,3-Dichloropropene	9.14	0.20	ug/L	10.0		91.4	80-124			
Toluene	9.29	0.20	ug/L	10.0		92.9	80-120			
trans-1,3-Dichloropropene	9.20	0.20	ug/L	10.0		92.0	71-127			
2-Hexanone	41.9	5.00	ug/L	50.0		83.7	69-133			
1,1,2-Trichloroethane	8.39	0.20	ug/L	10.0		83.9	80-121			
1,3-Dichloropropane	8.69	0.20	ug/L	10.0		86.9	80-120			
Tetrachloroethene	9.29	0.20	ug/L	10.0		92.9	80-120			
Dibromochloromethane	8.54	0.20	ug/L	10.0		85.4	65-135			
1,2-Dibromoethane	8.45	0.20	ug/L	10.0		84.5	80-121			
Chlorobenzene	9.01	0.20	ug/L	10.0		90.1	80-120			
Ethylbenzene	9.59	0.20	ug/L	10.0		95.9	80-120			
1,1,1,2-Tetrachloroethane	8.85	0.20	ug/L	10.0		88.5	80-120			
m,p-Xylene	19.6	0.40	ug/L	20.0		98.1	80-121			
o-Xylene	9.62	0.20	ug/L	10.0		96.2	80-121			
Styrene	9.73	0.20	ug/L	10.0		97.3	80-124			
Bromoform	8.46	0.20	ug/L	10.0		84.6	51-134			
1,1,2,2-Tetrachloroethane	8.33	0.20	ug/L	10.0		83.3	77-123			
1,2,3-Trichloropropane	8.16	0.50	ug/L	10.0		81.6	76-125			
trans-1,4-Dichloro 2-Butene	8.56	1.00	ug/L	10.0		85.6	55-129			
n-Propylbenzene	9.68	0.20	ug/L	10.0		96.8	78-130			
Bromobenzene	8.60	0.20	ug/L	10.0		86.0	80-120			
Isopropyl Benzene	9.72	0.20	ug/L	10.0		97.2	80-128			
2-Chlorotoluene	9.33	0.20	ug/L	10.0		93.3	78-122			
4-Chlorotoluene	9.44	0.20	ug/L	10.0		94.4	80-121			
t-Butylbenzene	9.54	0.20	ug/L	10.0		95.4	78-125			
1,3,5-Trimethylbenzene	9.89	0.20	ug/L	10.0		98.9	80-129			
1,2,4-Trimethylbenzene	9.92	0.20	ug/L	10.0		99.2	80-127			
s-Butylbenzene	9.60	0.20	ug/L	10.0		96.0	78-129			
4-Isopropyl Toluene	9.74	0.20	ug/L	10.0		97.4	79-130			
1,3-Dichlorobenzene	8.95	0.20	ug/L	10.0		89.5	80-120			
1,4-Dichlorobenzene	8.76	0.20	ug/L	10.0		87.6	80-120			
n-Butylbenzene	9.52	0.20	ug/L	10.0		95.2	74-129			



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Volatile Organic Compounds - Quality Control

Batch BGE0103 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0103-BS1)				Prepared: 03-May-2018 Analyzed: 03-May-2018 10:44						
1,2-Dichlorobenzene	8.70	0.20	ug/L	10.0		87.0	80-120			
1,2-Dibromo-3-chloropropane	7.68	0.50	ug/L	10.0		76.8	62-123			Q
1,2,4-Trichlorobenzene	8.66	0.50	ug/L	10.0		86.6	64-124			
Hexachloro-1,3-Butadiene	9.13	0.50	ug/L	10.0		91.3	58-123			
Naphthalene	11.0	0.50	ug/L	10.0		110	50-134			
1,2,3-Trichlorobenzene	8.01	0.50	ug/L	10.0		80.1	49-133			
Surrogate: 1,2-Dichloroethane-d4	4.70		ug/L	5.00		94.1	80-129			
Surrogate: Toluene-d8	5.06		ug/L	5.00		101	80-120			
Surrogate: 4-Bromofluorobenzene	5.14		ug/L	5.00		103	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.16		ug/L	5.00		103	80-120			

LCS Dup (BGE0103-BSD1)				Prepared: 03-May-2018 Analyzed: 03-May-2018 11:11						
QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloromethane	9.09	0.50	ug/L	10.0		90.9	60-138	2.62	30	
Vinyl Chloride	8.87	0.20	ug/L	10.0		88.7	66-133	4.74	30	
Bromomethane	9.50	1.00	ug/L	10.0		95.0	72-131	1.58	30	
Chloroethane	9.40	0.20	ug/L	10.0		94.0	60-155	4.70	30	
Trichlorofluoromethane	8.96	0.20	ug/L	10.0		89.6	80-129	2.13	30	
Acrolein	40.8	5.00	ug/L	50.0		81.6	52-144	11.90	30	Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.09	0.20	ug/L	10.0		90.9	76-129	0.40	30	
Acetone	47.6	5.00	ug/L	50.0		95.1	58-142	6.23	30	
1,1-Dichloroethene	9.41	0.20	ug/L	10.0		94.1	69-135	3.81	30	
Bromoethane	8.97	0.20	ug/L	10.0		89.7	78-128	1.79	30	
Iodomethane	9.59	1.00	ug/L	10.0		95.9	56-147	3.00	30	
Methylene Chloride	9.25	1.00	ug/L	10.0		92.5	65-135	0.25	30	
Acrylonitrile	9.29	1.00	ug/L	10.0		92.9	64-134	10.50	30	
Carbon Disulfide	8.99	0.20	ug/L	10.0		89.9	78-125	1.08	30	
trans-1,2-Dichloroethene	9.48	0.20	ug/L	10.0		94.8	78-128	1.02	30	
Vinyl Acetate	9.05	0.20	ug/L	10.0		90.5	55-138	9.50	30	
1,1-Dichloroethane	9.24	0.20	ug/L	10.0		92.4	76-124	2.40	30	
2-Butanone	45.8	5.00	ug/L	50.0		91.7	61-140	9.12	30	
2,2-Dichloropropane	9.12	0.20	ug/L	10.0		91.2	78-125	0.09	30	
cis-1,2-Dichloroethene	9.29	0.20	ug/L	10.0		92.9	80-121	2.49	30	
Chloroform	9.07	0.20	ug/L	10.0		90.7	80-122	1.41	30	
Bromochloromethane	9.63	0.20	ug/L	10.0		96.3	80-121	4.67	30	
1,1,1-Trichloroethane	9.58	0.20	ug/L	10.0		95.8	79-123	3.05	30	



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Volatile Organic Compounds - Quality Control

Batch BGE0103 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0103-BSD1)				Prepared: 03-May-2018 Analyzed: 03-May-2018 11:11						
1,1-Dichloropropene	9.64	0.20	ug/L	10.0		96.4	80-120	1.95	30	
Carbon tetrachloride	9.09	0.20	ug/L	10.0		90.9	53-137	2.19	30	
1,2-Dichloroethane	8.73	0.20	ug/L	10.0		87.3	75-123	4.92	30	
Benzene	9.47	0.20	ug/L	10.0		94.7	80-120	1.88	30	
Trichloroethene	9.06	0.20	ug/L	10.0		90.6	80-120	5.00	30	
1,2-Dichloropropane	9.00	0.20	ug/L	10.0		90.0	80-120	1.32	30	
Bromodichloromethane	9.25	0.20	ug/L	10.0		92.5	80-121	4.78	30	
Dibromomethane	9.21	0.20	ug/L	10.0		92.1	80-120	4.93	30	
4-Methyl-2-Pentanone	47.5	5.00	ug/L	50.0		95.0	67-133	14.00	30	
cis-1,3-Dichloropropene	9.44	0.20	ug/L	10.0		94.4	80-124	3.21	30	
Toluene	9.46	0.20	ug/L	10.0		94.6	80-120	1.76	30	
trans-1,3-Dichloropropene	9.67	0.20	ug/L	10.0		96.7	71-127	4.94	30	
2-Hexanone	47.2	5.00	ug/L	50.0		94.4	69-133	12.00	30	
1,1,2-Trichloroethane	9.21	0.20	ug/L	10.0		92.1	80-121	9.32	30	
1,3-Dichloropropane	9.31	0.20	ug/L	10.0		93.1	80-120	6.97	30	
Tetrachloroethene	9.38	0.20	ug/L	10.0		93.8	80-120	1.00	30	
Dibromochloromethane	9.30	0.20	ug/L	10.0		93.0	65-135	8.53	30	
1,2-Dibromoethane	9.15	0.20	ug/L	10.0		91.5	80-121	7.90	30	
Chlorobenzene	9.22	0.20	ug/L	10.0		92.2	80-120	2.25	30	
Ethylbenzene	9.65	0.20	ug/L	10.0		96.5	80-120	0.63	30	
1,1,1,2-Tetrachloroethane	9.14	0.20	ug/L	10.0		91.4	80-120	3.21	30	
m,p-Xylene	19.7	0.40	ug/L	20.0		98.3	80-121	0.24	30	
o-Xylene	9.73	0.20	ug/L	10.0		97.3	80-121	1.12	30	
Styrene	9.78	0.20	ug/L	10.0		97.8	80-124	0.52	30	
Bromoform	9.38	0.20	ug/L	10.0		93.8	51-134	10.30	30	
1,1,1,2-Tetrachloroethane	8.85	0.20	ug/L	10.0		88.5	77-123	6.00	30	
1,2,3-Trichloropropane	9.11	0.50	ug/L	10.0		91.1	76-125	11.00	30	
trans-1,4-Dichloro 2-Butene	9.09	1.00	ug/L	10.0		90.9	55-129	6.05	30	
n-Propylbenzene	9.82	0.20	ug/L	10.0		98.2	78-130	1.45	30	
Bromobenzene	9.26	0.20	ug/L	10.0		92.6	80-120	7.49	30	
Isopropyl Benzene	9.93	0.20	ug/L	10.0		99.3	80-128	2.13	30	
2-Chlorotoluene	9.56	0.20	ug/L	10.0		95.6	78-122	2.41	30	
4-Chlorotoluene	9.69	0.20	ug/L	10.0		96.9	80-121	2.65	30	
t-Butylbenzene	9.85	0.20	ug/L	10.0		98.5	78-125	3.12	30	
1,3,5-Trimethylbenzene	10.2	0.20	ug/L	10.0		102	80-129	2.71	30	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0103 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0103-BSD1)				Prepared: 03-May-2018 Analyzed: 03-May-2018 11:11						
1,2,4-Trimethylbenzene	10.1	0.20	ug/L	10.0		101	80-127	1.39	30	
s-Butylbenzene	9.82	0.20	ug/L	10.0		98.2	78-129	2.29	30	
4-Isopropyl Toluene	10.0	0.20	ug/L	10.0		100	79-130	2.78	30	
1,3-Dichlorobenzene	9.34	0.20	ug/L	10.0		93.4	80-120	4.28	30	
1,4-Dichlorobenzene	9.16	0.20	ug/L	10.0		91.6	80-120	4.46	30	
n-Butylbenzene	9.76	0.20	ug/L	10.0		97.6	74-129	2.52	30	
1,2-Dichlorobenzene	9.28	0.20	ug/L	10.0		92.8	80-120	6.50	30	
1,2-Dibromo-3-chloropropane	9.17	0.50	ug/L	10.0		91.7	62-123	17.70	30	Q
1,2,4-Trichlorobenzene	10.1	0.50	ug/L	10.0		101	64-124	15.50	30	
Hexachloro-1,3-Butadiene	9.67	0.50	ug/L	10.0		96.7	58-123	5.73	30	
Naphthalene	11.7	0.50	ug/L	10.0		117	50-134	6.65	30	
1,2,3-Trichlorobenzene	10.7	0.50	ug/L	10.0		107	49-133	28.90	30	
Surrogate: 1,2-Dichloroethane-d4	4.92		ug/L	5.00		98.4	80-129			
Surrogate: Toluene-d8	5.05		ug/L	5.00		101	80-120			
Surrogate: 4-Bromofluorobenzene	5.14		ug/L	5.00		103	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.91		ug/L	5.00		98.3	80-120			



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Project: Boeing Regional GW Developmental Center
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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0132 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0132-BLK1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 11:44								
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Bromoethane	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0132 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0132-BLK1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 11:44								
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0132 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0132-BLK1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 11:44								
Surrogate: 1,2-Dichloroethane-d4	5.03		ug/L	5.00		101	80-129			
Surrogate: Toluene-d8	4.88		ug/L	5.00		97.5	80-120			
Surrogate: 4-Bromofluorobenzene	4.71		ug/L	5.00		94.2	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.12		ug/L	5.00		102	80-120			
LCS (BGE0132-BS1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 09:34								
Chloromethane	9.11	0.50	ug/L	10.0		91.1	60-138			
Vinyl Chloride	8.81	0.20	ug/L	10.0		88.1	66-133			
Bromomethane	9.60	1.00	ug/L	10.0		96.0	72-131			
Chloroethane	9.29	0.20	ug/L	10.0		92.9	60-155			
Trichlorofluoromethane	9.45	0.20	ug/L	10.0		94.5	80-129			
Acrolein	37.3	5.00	ug/L	50.0		74.7	52-144			Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.58	0.20	ug/L	10.0		95.8	76-129			
Acetone	43.2	5.00	ug/L	50.0		86.4	58-142			
1,1-Dichloroethene	9.43	0.20	ug/L	10.0		94.3	69-135			
Bromoethane	9.46	0.20	ug/L	10.0		94.6	78-128			
Iodomethane	9.56	1.00	ug/L	10.0		95.6	56-147			
Methylene Chloride	9.81	1.00	ug/L	10.0		98.1	65-135			
Acrylonitrile	8.41	1.00	ug/L	10.0		84.1	64-134			
Carbon Disulfide	9.16	0.20	ug/L	10.0		91.6	78-125			
trans-1,2-Dichloroethene	9.65	0.20	ug/L	10.0		96.5	78-128			
Vinyl Acetate	8.77	0.20	ug/L	10.0		87.7	55-138			
1,1-Dichloroethane	9.37	0.20	ug/L	10.0		93.7	76-124			
2-Butanone	44.9	5.00	ug/L	50.0		89.9	61-140			
2,2-Dichloropropane	9.91	0.20	ug/L	10.0		99.1	78-125			
cis-1,2-Dichloroethene	9.38	0.20	ug/L	10.0		93.8	80-121			
Chloroform	9.27	0.20	ug/L	10.0		92.7	80-122			
Bromochloromethane	9.78	0.20	ug/L	10.0		97.8	80-121			
1,1,1-Trichloroethane	9.37	0.20	ug/L	10.0		93.7	79-123			
1,1-Dichloropropene	9.94	0.20	ug/L	10.0		99.4	80-120			
Carbon tetrachloride	9.44	0.20	ug/L	10.0		94.4	53-137			
1,2-Dichloroethane	8.87	0.20	ug/L	10.0		88.7	75-123			
Benzene	9.74	0.20	ug/L	10.0		97.4	80-120			
Trichloroethene	9.08	0.20	ug/L	10.0		90.8	80-120			
1,2-Dichloropropane	9.12	0.20	ug/L	10.0		91.2	80-120			



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0132 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0132-BS1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 09:34								
Bromodichloromethane	9.30	0.20	ug/L	10.0		93.0	80-121			
Dibromomethane	8.96	0.20	ug/L	10.0		89.6	80-120			
4-Methyl-2-Pentanone	43.8	5.00	ug/L	50.0		87.5	67-133			
cis-1,3-Dichloropropene	9.70	0.20	ug/L	10.0		97.0	80-124			
Toluene	9.78	0.20	ug/L	10.0		97.8	80-120			
trans-1,3-Dichloropropene	9.51	0.20	ug/L	10.0		95.1	71-127			
2-Hexanone	44.3	5.00	ug/L	50.0		88.6	69-133			
1,1,2-Trichloroethane	8.86	0.20	ug/L	10.0		88.6	80-121			
1,3-Dichloropropane	9.25	0.20	ug/L	10.0		92.5	80-120			
Tetrachloroethene	9.64	0.20	ug/L	10.0		96.4	80-120			
Dibromochloromethane	8.93	0.20	ug/L	10.0		89.3	65-135			
1,2-Dibromoethane	8.86	0.20	ug/L	10.0		88.6	80-121			
Chlorobenzene	9.40	0.20	ug/L	10.0		94.0	80-120			
Ethylbenzene	10.0	0.20	ug/L	10.0		100	80-120			
1,1,1,2-Tetrachloroethane	9.13	0.20	ug/L	10.0		91.3	80-120			
m,p-Xylene	20.2	0.40	ug/L	20.0		101	80-121			
o-Xylene	10.1	0.20	ug/L	10.0		101	80-121			
Styrene	10.3	0.20	ug/L	10.0		103	80-124			
Bromoform	8.59	0.20	ug/L	10.0		85.9	51-134			
1,1,2,2-Tetrachloroethane	8.15	0.20	ug/L	10.0		81.5	77-123			
1,2,3-Trichloropropane	8.20	0.50	ug/L	10.0		82.0	76-125			
trans-1,4-Dichloro 2-Butene	9.00	1.00	ug/L	10.0		90.0	55-129			
n-Propylbenzene	9.99	0.20	ug/L	10.0		99.9	78-130			
Bromobenzene	8.79	0.20	ug/L	10.0		87.9	80-120			
Isopropyl Benzene	10.1	0.20	ug/L	10.0		101	80-128			
2-Chlorotoluene	9.53	0.20	ug/L	10.0		95.3	78-122			
4-Chlorotoluene	9.70	0.20	ug/L	10.0		97.0	80-121			
t-Butylbenzene	9.84	0.20	ug/L	10.0		98.4	78-125			
1,3,5-Trimethylbenzene	10.1	0.20	ug/L	10.0		101	80-129			
1,2,4-Trimethylbenzene	10.2	0.20	ug/L	10.0		102	80-127			
s-Butylbenzene	9.93	0.20	ug/L	10.0		99.3	78-129			
4-Isopropyl Toluene	10.0	0.20	ug/L	10.0		100	79-130			
1,3-Dichlorobenzene	9.26	0.20	ug/L	10.0		92.6	80-120			
1,4-Dichlorobenzene	9.04	0.20	ug/L	10.0		90.4	80-120			
n-Butylbenzene	9.81	0.20	ug/L	10.0		98.1	74-129			



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0132 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0132-BS1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 09:34								
1,2-Dichlorobenzene	8.65	0.20	ug/L	10.0		86.5	80-120			
1,2-Dibromo-3-chloropropane	7.81	0.50	ug/L	10.0		78.1	62-123			Q
1,2,4-Trichlorobenzene	8.67	0.50	ug/L	10.0		86.7	64-124			
Hexachloro-1,3-Butadiene	9.31	0.50	ug/L	10.0		93.1	58-123			
Naphthalene	10.6	0.50	ug/L	10.0		106	50-134			
1,2,3-Trichlorobenzene	8.04	0.50	ug/L	10.0		80.4	49-133			
Surrogate: 1,2-Dichloroethane-d4	4.57		ug/L	5.00		91.4	80-129			
Surrogate: Toluene-d8	5.06		ug/L	5.00		101	80-120			
Surrogate: 4-Bromofluorobenzene	5.02		ug/L	5.00		100	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.97		ug/L	5.00		99.4	80-120			

LCS Dup (BGE0132-BS1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 10:00								
Chloromethane	8.95	0.50	ug/L	10.0		89.5	60-138	1.73	30	
Vinyl Chloride	8.62	0.20	ug/L	10.0		86.2	66-133	2.13	30	
Bromomethane	9.32	1.00	ug/L	10.0		93.2	72-131	2.94	30	
Chloroethane	8.73	0.20	ug/L	10.0		87.3	60-155	6.24	30	
Trichlorofluoromethane	8.87	0.20	ug/L	10.0		88.7	80-129	6.31	30	
Acrolein	38.2	5.00	ug/L	50.0		76.5	52-144	2.34	30	Q
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.89	0.20	ug/L	10.0		88.9	76-129	7.51	30	
Acetone	38.8	5.00	ug/L	50.0		77.6	58-142	10.80	30	
1,1-Dichloroethene	8.80	0.20	ug/L	10.0		88.0	69-135	6.87	30	
Bromoethane	8.83	0.20	ug/L	10.0		88.3	78-128	6.97	30	
Iodomethane	9.27	1.00	ug/L	10.0		92.7	56-147	3.15	30	
Methylene Chloride	9.24	1.00	ug/L	10.0		92.4	65-135	5.95	30	
Acrylonitrile	8.70	1.00	ug/L	10.0		87.0	64-134	3.45	30	
Carbon Disulfide	8.78	0.20	ug/L	10.0		87.8	78-125	4.30	30	
trans-1,2-Dichloroethene	9.14	0.20	ug/L	10.0		91.4	78-128	5.43	30	
Vinyl Acetate	8.86	0.20	ug/L	10.0		88.6	55-138	0.99	30	
1,1-Dichloroethane	9.12	0.20	ug/L	10.0		91.2	76-124	2.69	30	
2-Butanone	45.3	5.00	ug/L	50.0		90.6	61-140	0.81	30	
2,2-Dichloropropane	9.09	0.20	ug/L	10.0		90.9	78-125	8.61	30	
cis-1,2-Dichloroethene	9.10	0.20	ug/L	10.0		91.0	80-121	3.04	30	
Chloroform	8.92	0.20	ug/L	10.0		89.2	80-122	3.83	30	
Bromochloromethane	9.49	0.20	ug/L	10.0		94.9	80-121	3.04	30	
1,1,1-Trichloroethane	9.53	0.20	ug/L	10.0		95.3	79-123	1.68	30	



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0132 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0132-BSD1)		Prepared: 04-May-2018 Analyzed: 04-May-2018 10:00								
1,1-Dichloropropene	9.49	0.20	ug/L	10.0		94.9	80-120	4.64	30	
Carbon tetrachloride	9.07	0.20	ug/L	10.0		90.7	53-137	4.01	30	
1,2-Dichloroethane	8.84	0.20	ug/L	10.0		88.4	75-123	0.32	30	
Benzene	9.30	0.20	ug/L	10.0		93.0	80-120	4.66	30	
Trichloroethene	8.93	0.20	ug/L	10.0		89.3	80-120	1.61	30	
1,2-Dichloropropane	9.10	0.20	ug/L	10.0		91.0	80-120	0.30	30	
Bromodichloromethane	9.05	0.20	ug/L	10.0		90.5	80-121	2.76	30	
Dibromomethane	9.01	0.20	ug/L	10.0		90.1	80-120	0.60	30	
4-Methyl-2-Pentanone	46.3	5.00	ug/L	50.0		92.6	67-133	5.64	30	
cis-1,3-Dichloropropene	9.43	0.20	ug/L	10.0		94.3	80-124	2.82	30	
Toluene	9.48	0.20	ug/L	10.0		94.8	80-120	3.18	30	
trans-1,3-Dichloropropene	9.41	0.20	ug/L	10.0		94.1	71-127	1.09	30	
2-Hexanone	45.6	5.00	ug/L	50.0		91.2	69-133	2.89	30	
1,1,2-Trichloroethane	9.07	0.20	ug/L	10.0		90.7	80-121	2.42	30	
1,3-Dichloropropane	9.03	0.20	ug/L	10.0		90.3	80-120	2.45	30	
Tetrachloroethene	8.88	0.20	ug/L	10.0		88.8	80-120	8.19	30	
Dibromochloromethane	8.88	0.20	ug/L	10.0		88.8	65-135	0.50	30	
1,2-Dibromoethane	8.86	0.20	ug/L	10.0		88.6	80-121	0.06	30	
Chlorobenzene	8.90	0.20	ug/L	10.0		89.0	80-120	5.52	30	
Ethylbenzene	9.32	0.20	ug/L	10.0		93.2	80-120	7.04	30	
1,1,1,2-Tetrachloroethane	8.78	0.20	ug/L	10.0		87.8	80-120	3.93	30	
m,p-Xylene	19.2	0.40	ug/L	20.0		95.9	80-121	5.01	30	
o-Xylene	9.55	0.20	ug/L	10.0		95.5	80-121	5.19	30	
Styrene	9.80	0.20	ug/L	10.0		98.0	80-124	4.86	30	
Bromoform	8.90	0.20	ug/L	10.0		89.0	51-134	3.56	30	
1,1,1,2-Tetrachloroethane	8.81	0.20	ug/L	10.0		88.1	77-123	7.73	30	
1,2,3-Trichloropropane	9.19	0.50	ug/L	10.0		91.9	76-125	11.50	30	
trans-1,4-Dichloro 2-Butene	9.08	1.00	ug/L	10.0		90.8	55-129	0.85	30	
n-Propylbenzene	9.82	0.20	ug/L	10.0		98.2	78-130	1.76	30	
Bromobenzene	8.89	0.20	ug/L	10.0		88.9	80-120	1.12	30	
Isopropyl Benzene	9.86	0.20	ug/L	10.0		98.6	80-128	2.03	30	
2-Chlorotoluene	9.47	0.20	ug/L	10.0		94.7	78-122	0.66	30	
4-Chlorotoluene	9.65	0.20	ug/L	10.0		96.5	80-121	0.50	30	
t-Butylbenzene	9.78	0.20	ug/L	10.0		97.8	78-125	0.66	30	
1,3,5-Trimethylbenzene	9.98	0.20	ug/L	10.0		99.8	80-129	1.28	30	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0132 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0132-BSD1)				Prepared: 04-May-2018 Analyzed: 04-May-2018 10:00						
1,2,4-Trimethylbenzene	10.0	0.20	ug/L	10.0		100	80-127	1.20	30	
s-Butylbenzene	9.84	0.20	ug/L	10.0		98.4	78-129	0.91	30	
4-Isopropyl Toluene	9.86	0.20	ug/L	10.0		98.6	79-130	1.61	30	
1,3-Dichlorobenzene	9.11	0.20	ug/L	10.0		91.1	80-120	1.68	30	
1,4-Dichlorobenzene	8.98	0.20	ug/L	10.0		89.8	80-120	0.61	30	
n-Butylbenzene	9.66	0.20	ug/L	10.0		96.6	74-129	1.48	30	
1,2-Dichlorobenzene	9.07	0.20	ug/L	10.0		90.7	80-120	4.75	30	
1,2-Dibromo-3-chloropropane	8.70	0.50	ug/L	10.0		87.0	62-123	10.80	30	Q
1,2,4-Trichlorobenzene	9.67	0.50	ug/L	10.0		96.7	64-124	10.90	30	
Hexachloro-1,3-Butadiene	9.40	0.50	ug/L	10.0		94.0	58-123	0.97	30	
Naphthalene	11.1	0.50	ug/L	10.0		111	50-134	5.07	30	
1,2,3-Trichlorobenzene	10.0	0.50	ug/L	10.0		100	49-133	21.90	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	4.82		ug/L	5.00		96.4	80-129			
<i>Surrogate: Toluene-d8</i>	5.02		ug/L	5.00		100	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	5.13		ug/L	5.00		103	80-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	5.10		ug/L	5.00		102	80-120			



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Volatile Organic Compounds - Quality Control

Batch BGE0157 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0157-BLK1)										
Prepared: 07-May-2018 Analyzed: 07-May-2018 11:35										
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Bromoethane	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0157 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0157-BLK1)		Prepared: 07-May-2018 Analyzed: 07-May-2018 11:35								
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0157 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0157-BLK1)		Prepared: 07-May-2018 Analyzed: 07-May-2018 11:35								
Surrogate: 1,2-Dichloroethane-d4	5.02		ug/L	5.00		100	80-129			
Surrogate: Toluene-d8	4.64		ug/L	5.00		92.7	80-120			
Surrogate: 4-Bromofluorobenzene	4.62		ug/L	5.00		92.4	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.17		ug/L	5.00		103	80-120			
LCS (BGE0157-BS1)		Prepared: 07-May-2018 Analyzed: 07-May-2018 09:51								
Chloromethane	6.83	0.50	ug/L	10.0		68.3	60-138			Q
Vinyl Chloride	8.90	0.20	ug/L	10.0		89.0	66-133			
Bromomethane	8.50	1.00	ug/L	10.0		85.0	72-131			
Chloroethane	9.47	0.20	ug/L	10.0		94.7	60-155			
Trichlorofluoromethane	9.38	0.20	ug/L	10.0		93.8	80-129			
Acrolein	43.9	5.00	ug/L	50.0		87.8	52-144			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.01	0.20	ug/L	10.0		90.1	76-129			
Acetone	38.4	5.00	ug/L	50.0		76.8	58-142			Q
1,1-Dichloroethene	8.49	0.20	ug/L	10.0		84.9	69-135			
Bromoethane	9.32	0.20	ug/L	10.0		93.2	78-128			
Iodomethane	9.04	1.00	ug/L	10.0		90.4	56-147			
Methylene Chloride	8.87	1.00	ug/L	10.0		88.7	65-135			
Acrylonitrile	8.14	1.00	ug/L	10.0		81.4	64-134			
Carbon Disulfide	8.63	0.20	ug/L	10.0		86.3	78-125			
trans-1,2-Dichloroethene	8.73	0.20	ug/L	10.0		87.3	78-128			
Vinyl Acetate	7.59	0.20	ug/L	10.0		75.9	55-138			Q
1,1-Dichloroethane	8.95	0.20	ug/L	10.0		89.5	76-124			
2-Butanone	41.9	5.00	ug/L	50.0		83.8	61-140			
2,2-Dichloropropane	9.27	0.20	ug/L	10.0		92.7	78-125			
cis-1,2-Dichloroethene	9.48	0.20	ug/L	10.0		94.8	80-121			
Chloroform	8.79	0.20	ug/L	10.0		87.9	80-122			
Bromochloromethane	9.38	0.20	ug/L	10.0		93.8	80-121			
1,1,1-Trichloroethane	8.78	0.20	ug/L	10.0		87.8	79-123			
1,1-Dichloropropene	9.46	0.20	ug/L	10.0		94.6	80-120			
Carbon tetrachloride	8.67	0.20	ug/L	10.0		86.7	53-137			
1,2-Dichloroethane	8.28	0.20	ug/L	10.0		82.8	75-123			
Benzene	9.69	0.20	ug/L	10.0		96.9	80-120			
Trichloroethene	9.31	0.20	ug/L	10.0		93.1	80-120			
1,2-Dichloropropane	9.27	0.20	ug/L	10.0		92.7	80-120			



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Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0157 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0157-BS1)		Prepared: 07-May-2018 Analyzed: 07-May-2018 09:51								
Bromodichloromethane	8.66	0.20	ug/L	10.0		86.6	80-121			
Dibromomethane	9.03	0.20	ug/L	10.0		90.3	80-120			
4-Methyl-2-Pentanone	44.6	5.00	ug/L	50.0		89.2	67-133			
cis-1,3-Dichloropropene	8.50	0.20	ug/L	10.0		85.0	80-124			
Toluene	9.12	0.20	ug/L	10.0		91.2	80-120			
trans-1,3-Dichloropropene	8.10	0.20	ug/L	10.0		81.0	71-127			
2-Hexanone	41.2	5.00	ug/L	50.0		82.5	69-133			
1,1,2-Trichloroethane	9.16	0.20	ug/L	10.0		91.6	80-121			
1,3-Dichloropropane	9.39	0.20	ug/L	10.0		93.9	80-120			
Tetrachloroethene	9.24	0.20	ug/L	10.0		92.4	80-120			
Dibromochloromethane	9.26	0.20	ug/L	10.0		92.6	65-135			
1,2-Dibromoethane	8.43	0.20	ug/L	10.0		84.3	80-121			
Chlorobenzene	9.22	0.20	ug/L	10.0		92.2	80-120			
Ethylbenzene	9.36	0.20	ug/L	10.0		93.6	80-120			
1,1,1,2-Tetrachloroethane	8.88	0.20	ug/L	10.0		88.8	80-120			
m,p-Xylene	19.1	0.40	ug/L	20.0		95.7	80-121			
o-Xylene	9.79	0.20	ug/L	10.0		97.9	80-121			
Styrene	9.24	0.20	ug/L	10.0		92.4	80-124			
Bromoform	9.36	0.20	ug/L	10.0		93.6	51-134			
1,1,2,2-Tetrachloroethane	8.90	0.20	ug/L	10.0		89.0	77-123			
1,2,3-Trichloropropane	8.80	0.50	ug/L	10.0		88.0	76-125			
trans-1,4-Dichloro 2-Butene	8.16	1.00	ug/L	10.0		81.6	55-129			
n-Propylbenzene	9.68	0.20	ug/L	10.0		96.8	78-130			
Bromobenzene	9.44	0.20	ug/L	10.0		94.4	80-120			
Isopropyl Benzene	10.1	0.20	ug/L	10.0		101	80-128			
2-Chlorotoluene	9.60	0.20	ug/L	10.0		96.0	78-122			
4-Chlorotoluene	9.57	0.20	ug/L	10.0		95.7	80-121			
t-Butylbenzene	9.81	0.20	ug/L	10.0		98.1	78-125			
1,3,5-Trimethylbenzene	9.85	0.20	ug/L	10.0		98.5	80-129			
1,2,4-Trimethylbenzene	9.86	0.20	ug/L	10.0		98.6	80-127			
s-Butylbenzene	9.54	0.20	ug/L	10.0		95.4	78-129			
4-Isopropyl Toluene	9.90	0.20	ug/L	10.0		99.0	79-130			
1,3-Dichlorobenzene	9.38	0.20	ug/L	10.0		93.8	80-120			
1,4-Dichlorobenzene	8.90	0.20	ug/L	10.0		89.0	80-120			
n-Butylbenzene	9.45	0.20	ug/L	10.0		94.5	74-129			



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24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0157 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0157-BS1)		Prepared: 07-May-2018 Analyzed: 07-May-2018 09:51								
1,2-Dichlorobenzene	9.09	0.20	ug/L	10.0		90.9	80-120			
1,2-Dibromo-3-chloropropane	8.96	0.50	ug/L	10.0		89.6	62-123			
1,2,4-Trichlorobenzene	9.47	0.50	ug/L	10.0		94.7	64-124			
Hexachloro-1,3-Butadiene	8.50	0.50	ug/L	10.0		85.0	58-123			
Naphthalene	8.51	0.50	ug/L	10.0		85.1	50-134			
1,2,3-Trichlorobenzene	9.15	0.50	ug/L	10.0		91.5	49-133			
Surrogate: 1,2-Dichloroethane-d4	4.37		ug/L	5.00		87.5	80-129			
Surrogate: Toluene-d8	5.07		ug/L	5.00		101	80-120			
Surrogate: 4-Bromofluorobenzene	5.00		ug/L	5.00		99.9	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.79		ug/L	5.00		95.7	80-120			

LCS Dup (BGE0157-BS1)		Prepared: 07-May-2018 Analyzed: 07-May-2018 10:11								
Chloromethane	7.39	0.50	ug/L	10.0		73.9	60-138	7.90	30	Q
Vinyl Chloride	8.93	0.20	ug/L	10.0		89.3	66-133	0.38	30	
Bromomethane	8.80	1.00	ug/L	10.0		88.0	72-131	3.42	30	
Chloroethane	9.82	0.20	ug/L	10.0		98.2	60-155	3.60	30	
Trichlorofluoromethane	9.72	0.20	ug/L	10.0		97.2	80-129	3.59	30	
Acrolein	45.8	5.00	ug/L	50.0		91.6	52-144	4.24	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.85	0.20	ug/L	10.0		88.5	76-129	1.73	30	
Acetone	41.9	5.00	ug/L	50.0		83.8	58-142	8.75	30	Q
1,1-Dichloroethene	8.81	0.20	ug/L	10.0		88.1	69-135	3.68	30	
Bromoethane	9.61	0.20	ug/L	10.0		96.1	78-128	3.05	30	
Iodomethane	9.36	1.00	ug/L	10.0		93.6	56-147	3.44	30	
Methylene Chloride	9.03	1.00	ug/L	10.0		90.3	65-135	1.82	30	
Acrylonitrile	8.69	1.00	ug/L	10.0		86.9	64-134	6.43	30	
Carbon Disulfide	9.05	0.20	ug/L	10.0		90.5	78-125	4.71	30	
trans-1,2-Dichloroethene	9.06	0.20	ug/L	10.0		90.6	78-128	3.70	30	
Vinyl Acetate	8.27	0.20	ug/L	10.0		82.7	55-138	8.57	30	Q
1,1-Dichloroethane	9.49	0.20	ug/L	10.0		94.9	76-124	5.90	30	
2-Butanone	47.0	5.00	ug/L	50.0		94.0	61-140	11.50	30	
2,2-Dichloropropane	9.59	0.20	ug/L	10.0		95.9	78-125	3.40	30	
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	80-121	6.70	30	
Chloroform	9.21	0.20	ug/L	10.0		92.1	80-122	4.63	30	
Bromochloromethane	9.85	0.20	ug/L	10.0		98.5	80-121	4.90	30	
1,1,1-Trichloroethane	9.08	0.20	ug/L	10.0		90.8	79-123	3.38	30	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0157 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0157-BS01)										
					Prepared: 07-May-2018 Analyzed: 07-May-2018 10:11					
1,1-Dichloropropene	9.91	0.20	ug/L	10.0		99.1	80-120	4.62	30	
Carbon tetrachloride	9.14	0.20	ug/L	10.0		91.4	53-137	5.31	30	
1,2-Dichloroethane	8.68	0.20	ug/L	10.0		86.8	75-123	4.73	30	
Benzene	10.1	0.20	ug/L	10.0		101	80-120	3.78	30	
Trichloroethene	9.93	0.20	ug/L	10.0		99.3	80-120	6.39	30	
1,2-Dichloropropane	9.63	0.20	ug/L	10.0		96.3	80-120	3.85	30	
Bromodichloromethane	9.15	0.20	ug/L	10.0		91.5	80-121	5.46	30	
Dibromomethane	9.45	0.20	ug/L	10.0		94.5	80-120	4.50	30	
4-Methyl-2-Pentanone	48.3	5.00	ug/L	50.0		96.7	67-133	8.00	30	
cis-1,3-Dichloropropene	8.98	0.20	ug/L	10.0		89.8	80-124	5.52	30	
Toluene	9.72	0.20	ug/L	10.0		97.2	80-120	6.37	30	
trans-1,3-Dichloropropene	8.44	0.20	ug/L	10.0		84.4	71-127	4.07	30	
2-Hexanone	45.2	5.00	ug/L	50.0		90.4	69-133	9.13	30	
1,1,2-Trichloroethane	9.67	0.20	ug/L	10.0		96.7	80-121	5.38	30	
1,3-Dichloropropane	10.3	0.20	ug/L	10.0		103	80-120	8.78	30	
Tetrachloroethene	9.80	0.20	ug/L	10.0		98.0	80-120	5.83	30	
Dibromochloromethane	10.1	0.20	ug/L	10.0		101	65-135	8.92	30	
1,2-Dibromoethane	8.87	0.20	ug/L	10.0		88.7	80-121	5.16	30	
Chlorobenzene	9.91	0.20	ug/L	10.0		99.1	80-120	7.28	30	
Ethylbenzene	10.2	0.20	ug/L	10.0		102	80-120	8.17	30	
1,1,1,2-Tetrachloroethane	9.55	0.20	ug/L	10.0		95.5	80-120	7.20	30	
m,p-Xylene	20.6	0.40	ug/L	20.0		103	80-121	7.44	30	
o-Xylene	10.3	0.20	ug/L	10.0		103	80-121	4.95	30	
Styrene	9.77	0.20	ug/L	10.0		97.7	80-124	5.62	30	
Bromoform	9.96	0.20	ug/L	10.0		99.6	51-134	6.23	30	
1,1,1,2-Tetrachloroethane	10.1	0.20	ug/L	10.0		101	77-123	12.10	30	
1,2,3-Trichloropropane	9.36	0.50	ug/L	10.0		93.6	76-125	6.18	30	
trans-1,4-Dichloro 2-Butene	8.65	1.00	ug/L	10.0		86.5	55-129	5.79	30	
n-Propylbenzene	10.4	0.20	ug/L	10.0		104	78-130	6.90	30	
Bromobenzene	10.0	0.20	ug/L	10.0		100	80-120	5.80	30	
Isopropyl Benzene	10.8	0.20	ug/L	10.0		108	80-128	6.80	30	
2-Chlorotoluene	10.2	0.20	ug/L	10.0		102	78-122	5.69	30	
4-Chlorotoluene	10.4	0.20	ug/L	10.0		104	80-121	8.44	30	
t-Butylbenzene	10.5	0.20	ug/L	10.0		105	78-125	6.39	30	
1,3,5-Trimethylbenzene	10.4	0.20	ug/L	10.0		104	80-129	5.73	30	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
24-May-2018 11:44

Volatile Organic Compounds - Quality Control

Batch BGE0157 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0157-BSD1)				Prepared: 07-May-2018 Analyzed: 07-May-2018 10:11						
1,2,4-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-127	6.78	30	
s-Butylbenzene	10.3	0.20	ug/L	10.0		103	78-129	7.52	30	
4-Isopropyl Toluene	10.5	0.20	ug/L	10.0		105	79-130	5.79	30	
1,3-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120	7.98	30	
1,4-Dichlorobenzene	9.39	0.20	ug/L	10.0		93.9	80-120	5.38	30	
n-Butylbenzene	10.1	0.20	ug/L	10.0		101	74-129	6.97	30	
1,2-Dichlorobenzene	9.81	0.20	ug/L	10.0		98.1	80-120	7.69	30	
1,2-Dibromo-3-chloropropane	9.66	0.50	ug/L	10.0		96.6	62-123	7.50	30	
1,2,4-Trichlorobenzene	9.95	0.50	ug/L	10.0		99.5	64-124	4.91	30	
Hexachloro-1,3-Butadiene	9.33	0.50	ug/L	10.0		93.3	58-123	9.21	30	
Naphthalene	9.28	0.50	ug/L	10.0		92.8	50-134	8.68	30	
1,2,3-Trichlorobenzene	9.72	0.50	ug/L	10.0		97.2	49-133	6.10	30	
Surrogate: 1,2-Dichloroethane-d4	4.44		ug/L	5.00		88.8	80-129			
Surrogate: Toluene-d8	4.92		ug/L	5.00		98.5	80-120			
Surrogate: 4-Bromofluorobenzene	4.82		ug/L	5.00		96.4	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.05		ug/L	5.00		101	80-120			



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Reported:
24-May-2018 11:44

Dissolved Gases - Quality Control

Batch BGE0082 - No Prep - Volatiles

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0082-BLK1)		Prepared: 08-May-2018 Analyzed: 08-May-2018 10:04								
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1850		ug/L	1800		103	72-122			
LCS (BGE0082-BS1)		Prepared: 08-May-2018 Analyzed: 08-May-2018 09:04								
Methane	704		ug/L	656		107	80-120			
Ethane	1220		ug/L	1230		99.0	80-120			
Ethene	1180		ug/L	1150		102	80-120			
Acetylene	1100		ug/L	1060		104	73-123			E
Surrogate: Propane	1890		ug/L	1800		105	62-122			
LCS Dup (BGE0082-BSD1)		Prepared: 08-May-2018 Analyzed: 08-May-2018 09:18								
Methane	743		ug/L	656		113	80-120	5.39	30	
Ethane	1260		ug/L	1230		103	80-120	3.60	30	
Ethene	1220		ug/L	1150		106	80-120	3.98	30	
Acetylene	1190		ug/L	1060		113	73-123	7.88	30	E
Surrogate: Propane	1920		ug/L	1800		107	62-122			



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Wet Chemistry - Quality Control

Batch BGE0091 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0091-BLK1)						Prepared: 03-May-2018 Analyzed: 03-May-2018 12:25					
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BGE0091-BS1)						Prepared: 03-May-2018 Analyzed: 03-May-2018 12:47					
Total Organic Carbon	20.82	0.50	0.50	mg/L	20.00		104	90-110			



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24-May-2018 11:44

Wet Chemistry - Quality Control

Batch BGE0178 - No Prep Wet Chem

Instrument: DX500 Analyst: SK

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0178-BLK1)						Prepared: 07-May-2018 Analyzed: 07-May-2018 17:42					
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BGE0178-BS1)						Prepared: 07-May-2018 Analyzed: 07-May-2018 17:59					
Sulfate	1.47	0.100	0.100	mg/L	1.50		97.8	90-110			



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24-May-2018 11:44

Certified Analyses included in this Report

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



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



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24-May-2018 11:44

n-Hexane WADOE
2-Pentanone WADOE

EPA RSK-175 in Water

Methane NELAP
Ethane NELAP
Ethene NELAP
Acetylene NELAP

SM 5310 B-00 in Water

Total Organic Carbon WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/07/2019
CALAP	California Department of Public Health CAELAP	2748	06/30/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-011	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018



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Notes and Definitions

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

SWMU-17
(Groundwater Sample Collection Forms and Analytical Data)

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 756
 Sample Number: BDC-05-02 180502 Weather: 50'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.76 Time: 700 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 733 End Purge: Date/Time: 5/ 2 /2018 @ 754 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
736	14.4	7974	0.37	5.09	29.6			<0.25	
739	14.3	7969	0.40	5.09	27.9				
742	14.2	7943	0.43	5.09	22.7		11.87	0.25	
745	14.2	7888	0.51	5.11	16.0				
748	14.2	7874	0.53	5.11	13.4				
751	14.5	7782	0.62	5.14	5.8			0.5	
753	14.5	7748	0.64	5.15	4.1				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____

Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, DARK AMBER COLOR, STRON INJECTION FLUID ODOR/ SLIGHT SHEEN (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	14.5	7742	0.65	5.15	3.6				
2	14.5	7732	0.66	5.16	3.3				
3	14.5	7725	0.66	5.16	3.0				
4	14.5	7722	0.66	5.16	2.8				
Average:	14.5	7730	0.66	5.16	3.2	#DIV/0!		8.6 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: NEW TUBING. HARD TO TELL FERROUS IRON DUE TO DARK COLOR OF SAMPLE
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1011
 Sample Number: BDC-05-03 180502 Weather: 50'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.94 Time: 922 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 948 End Purge: Date/Time: 5/ 2 /2018 @ 1009 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits +/- 3% +/- 3% +/- 10% +/- 0.1 units +/- 10 mV +/- 10% < 0.3 ft >= 1 flow through cell									
951	15.6	4965	0.23	5.44	30.6			<0.25	
954	15.8	4999	0.31	5.44	17.4			<0.25	
957	15.6	4972	0.42	5.44	11.9		12.08	0.25	
1000	15.6	4970	0.44	5.44	10.8				
1003	15.6	4965	0.55	5.44	5.9				
1006	15.6	4958	0.62	5.44	3.1			0.5	
1008	15.4	4950	0.64	5.45	1.7				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____

Sample Description (color, turbidity, odor, sheen, etc.): TURBID, DARK AMBER COLOR, STRONG INJECTION FLUID ODOR/SLIGHT SHEEN (EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.4	4949	0.64	5.45	1.5				
2	15.4	4949	0.64	5.45	1.3				
3	15.4	4949	0.65	5.45	1.1				
4	15.4	4949	0.65	5.45	0.8				
Average:	15.4	4949	0.65	5.45	1.2	#DIV/0!		7.8 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 907
 Sample Number: BDC-05-04 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.95 Time: 838 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 838 End Purge: Date/Time: 5/ 2 /2018 @ 900 Gallons Purged: 0.75
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
841	14.7	1816	1.91	6	-35.7		11.97		
844	14.9	1818	2.07	5.82	-59.6				
847	14.9	1801	2.61	5.76	-73				
850	15	1744	3.2	5.72	-85.5				
853	15	1700	3.82	5.7	-96.1				
856	15	1680	4.15	5.69	-102.7				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): AMBER LOW TURBIDITY NO SHEEN INJECTION FLUID ODOR SLIGHT EFFERVE

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.1	1673	4.27	5.68	-106.1				
2	15.1	1671	4.26	5.68	-106.6				
3	15.1	1669	4.24	5.68	-107.3				
4	15.1	1669	4.23	5.68	-108				
Average:	15.1	1671	4.25	5.68	-107.0	#DIV/0!		4.7 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 717
 Sample Number: BDC-05-05 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.58 Time: 638 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 650 End Purge: Date/Time: 5/ 2 /2018 @ 704 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
653	12.7	299.8	4.05	6.42	197.5				
656	12.7	284.4	4.04	6.2	202				
659	12.8	284.8	3.98	6.21	196.9				
702	13	285.5	3.99	6.24	192.7				
705									
708									

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR COLORLESS NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	13	285.7	4.1	6.24	192.2				
2	13	285.9	4.03	6.25	191.8				
3	13	286	3.99	6.25	191.3				
4	13	285.9	3.98	6.26	191				
Average:	13.0	285.9	4.03	6.25	191.6	#DIV/0!		0 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/2 /2018 @ 757
 Sample Number: BDC-05-07 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.34 Time: 734 Flow through cell vol. _____ GW Meter No.(s) _____
 Begin Purge: Date/Time: 5/2 /2018 @ 735 End Purge: Date/Time: 5/2 /2018 @ 756 Gallons Purged: 0.75
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
738	14.3	2459	1.53	6.43	-197.8		11.41		
741	14.1	2467	1.49	6.51	-207.7		11.39		
744	14.2	2491	2.53	6.54	-217.3		11.39		
747	14.3	2496	2.97	6.55	-219.5				
750	14.3	2493	3.41	6.56	-221.7				
753	14.3	2479	3.61	6.56	-224				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): BROWN MODERATE TURBIDITY SHEEN INJECTION FLUID ODOR FOAMY

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	14.3	2479	3.61	6.57	-224.3				
2	14.3	2480	3.63	6.57	-224.5				
3	14.3	2479	3.63	6.57	-224.7				
4	14.3	2478	3.66	6.57	-224.9				
Average:	14.3	2479	3.63	6.57	-224.6	#DIV/0!		7.4 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/2 /2018 @ 957
 Sample Number: BDC-05-08 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.12 Time: 935 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/2 /2018 @ 935 End Purge: Date/Time: 5/2 /2018 @ 953 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
938	15.8	393	1.29	6.41	-86				
941	15.9	391.6	1.18	6.44	-98.7				
944	15.8	387.5	1.22	6.46	-110.7				
947	15.8	387.4	1.28	6.46	-113.9				
950	15.9	389.7	1.37	6.46	-116.5				
953									

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): COLORLESS CLOUDY NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.9	389.2	1.41	6.46	-117.1				
2	15.9	390.8	1.46	6.46	-117.1				
3	16.1	390.9	1.47	6.46	-117.5				
4	15.9	390.6	1.43	6.45	-117.8				
Average:	16.0	390.4	1.44	6.46	-117.4	#DIV/0!		3.4 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/2/2018 @ 711
 Sample Number: BDC-05-09 180502 Weather: 50'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.79 Time: 643 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/2/2018 @ 647 End Purge: Date/Time: 5/2/2018 @ 708 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
650	12.5	670.0	0.40	5.99	63.7	LOW	11.79	<0.25	
653	12.7	677.0	0.48	5.98	44.2		11.79	<0.25	
656	12.8	679.0	0.49	5.99	30.2		11.79	0.25	
659	12.9	681.0	0.50	6.04	22.2				
702	13.1	687.0	0.49	6.08	12.1				
705	13.4	690.0	0.47	6.11	6.7				
707	13.5	698.0	0.45	6.15	-1.2				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, YELLOW TINT, NO/NS (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	13.5	698.0	0.46	6.15	-1.6				
2	13.5	699.0	0.46	6.15	-2.1				
3	13.5	700.0	0.46	6.15	-2.5				
4	13.6	701.0	0.46	6.15	-2.9				
Average:	13.5	699.5	0.46	6.15	-2.3	#DIV/0!		2.0 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 851
 Sample Number: BDC-05-10 180502 Weather: 50'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.74 Time: 821 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 826 End Purge: Date/Time: 5/ 2 /2018 @ 847 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
829	15.7	2545	6.81	6.35	-32.5	LOW		<0.25	
832	15.3	1517	0.87	6.37	-40.3				
835	15.0	2489	0.19	6.40	-59.4			0.25	
838	15.0	2493	0.21	6.40	-63.0				
841	15.1	2500	0.26	6.41	-68.6		11.81		
844	15.1	2486	0.37	6.43	-77.1			0.5	
846	15.0	2472	0.40	6.44	-79.0				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____

Sample Description (color, turbidity, odor, sheen, etc.): TURBID, DARK AMBER COLOR, STRONG INJECTION FLUID ODOR/NS (FOAMY)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.0	2469	0.40	6.44	-79.4				
2	15.0	2470	0.41	6.44	-79.7				
3	14.9	2477	0.42	6.44	-79.9				
4	15.0	2478	0.42	6.44	-80.2				
Average:	15.0	2474	0.41	6.44	-79.8	#DIV/0!		4.2 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: NEW TUBING. CLOGGED A METALS FILTER. HAD TO USE TWO TO COMPLETE SMAPLE.
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 941
 Sample Number: BDC-05-11 180502 Weather: 50'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.96 Time: 850 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 916 End Purge: Date/Time: 5/ 2 /2018 @ 926 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
919	14.3	588	0.13	6.37	3.5	LOW		<0.25	
922	14.3	586	0.15	6.30	-0.9				
925	14.4	581	0.15	6.27	-4.2				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, YELLOW, NO/NS (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	14.2	582	0.16	6.27	-4.6				
2	14.3	581	0.15	6.27	-4.9				
3	14.3	581	0.15	6.27	-5.1				
4	14.3	581	0.15	6.27	-5.3				
Average:	14.3	581	0.15	6.27	-5.0	#DIV/0!		2.4 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: WELL PARKED OVER BY CAR. COULD NOT FIT WATER LEVEL TO CONTINUES DRAWDOWN MEASUREMENTS
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1101
 Sample Number: BDC-05-12 180502 Weather: 50'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.94 Time: 1029 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1039 End Purge: Date/Time: 5/ 2 /2018 @ 1100 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1042	16.9	577	0.19	6.30	7.6	LOW		<0.25	
1045	17.1	573	0.26	6.30	5.1		12.01	<0.25	
1048	16.9	571	0.24	6.30	3.8			0.25	
1051	17.1	552	0.17	6.30	-1.8				
1054	17.1	541	0.20	6.29	-8.5				
1057	16.8	537	0.21	6.19	-10.9			0.5	
1059	17.0	533	0.21	6.29	-12.0				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17.0	533	0.21	6.29	-12.4				
2	17.0	533	0.20	6.29	-12.4				
3	17.0	532	0.20	6.29	-12.5				
4	17.0	532	0.20	6.29	-12.7				
Average:	17.0	533	0.20	6.29	-12.5	#DIV/0!		4.6 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): Duplicate location (DUP3)
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 700
 Sample Number: BDC-DUP3 180502 Weather: 50'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) _____ Time: _____ Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ End Purge: Date/Time: 5/ 2 /2018 @ Gallons Purged: _____
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		

SEE BDC-05-12 SCF FOR PURGE DATA

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17.0	533	0.21	6.29	-12.4				
2	17.0	533	0.20	6.29	-12.4				
3	17.0	532	0.20	6.29	-12.5				
4	17.0	532	0.20	6.29	-12.7				
Average:	17.0	533	0.20	6.29	-12.5	#DIV/0!		mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): Duplicate to BD-05-12
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/2/2018 @ 1547
 Sample Number: BDC-05-13 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.45 Time: 1515 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/2/2018 @ 1517 End Purge: Date/Time: 5/2/2018 @ 1531 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1520	15.6	495.5	1.36	6.46	-29				
1523	15.4	495.4	1.1	6.43	-50.2				
1526	15.4	496.4	1.01	6.42	-63				
1529	15.5	501	1.05	6.42	-76.9				
1532									
1535									

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type P-PUMP
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR COLORLESS NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.3	498	1.01	6.43	-79				
2	15.2	497	0.98	6.43	-79.9				
3	15.3	496.5	0.96	6.43	-80.8				
4	15.3	497	0.95	6.43	-81.7				
Average:	15.3	497	0.98	6.43	-80.4	#DIV/0!		1.6 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/2/2018 @ 1507
 Sample Number: BDC-05-14 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.71 Time: 1436 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/2/2018 @ 1438 End Purge: Date/Time: 5/2/2018 @ 1451 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1441	17.2	521	1.18	6.5	-54.8				
1444	17.1	532	0.99	6.47	-81				
1447	17.1	533	0.94	6.47	-89.4				
1450	17	534	0.91	6.46	-96.8				
1453									
1456									

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR COLORLESS NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17	534	0.93	6.46	-97.7				
2	17	534	0.91	6.46	-98.2				
3	16.9	534	0.94	6.46	-98.7				
4	16.9	534	0.91	6.46	-99.2				
Average:	17.0	534	0.92	6.46	-98.5	#DIV/0!		2.8 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1237
 Sample Number: BDC-05-15 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.26 Time: 1212 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1213 End Purge: Date/Time: 5/ 2 /2018 @ 1231 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1216	16	518	1.37	6.57	-78.4				
1219	16.2	520	0.98	6.59	-112				
1222	16.1	520	0.84	6.6	-118.7				
1225	16.1	520	1.01	6.61	-124.9				
1228	16.2	520	0.94	6.61	-127.8				
1231	16	520	0.91	6.62	-130.8				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR COLORLESS NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	16.1	520	0.88	6.62	-130.8				
2	16.1	520	0.87	6.62	-131				
3	16.2	520	0.88	6.62	-131.4				
4	16.2	520	0.88	6.62	-132				
Average:	16.2	520	0.88	6.62	-131.3	#DIV/0!		1.8 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1211
 Sample Number: BDC-05-16 180502 Weather: 60'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.51 Time: 1143 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1150 End Purge: Date/Time: 5/ 2 /2018 @ 1210 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1153	15.8	426.5	0.09	6.45	24.1	LOW	11.53	<0.25	
1156	15.8	426.7	0.07	6.45	16.1		11.53		
1159	15.7	426.5	0.10	6.44	10.5			0.25	
1202	15.8	427.9	0.09	6.44	5.0				
1205	15.8	429.5	0.07	6.44	0.4				
1208	15.7	429.5	0.08	6.44	-1.8				
1210	15.7	429.7	0.01	6.45	-3.5				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.7	429.7	0.11	6.45	-3.9				
2	15.7	429.8	0.10	6.45	-4.2				
3	15.7	429.7	0.09	6.45	-4.6				
4	15.7	429.7	0.09	6.45	-5.0				
Average:	15.7	429.7	0.10	6.45	-4.4	#DIV/0!		3.2 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1301
 Sample Number: BDC-05-17 180502 Weather: 60'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.77 Time: 1233 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1239 End Purge: Date/Time: 5/ 2 /2018 @ 1249 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1242	18.1	457.3	0.12	6.47	23.0	LOW	11.77	<0.25	
1245	18.1	457.4	0.13	6.47	9.9		11.77		
1248	18.1	457.6	0.13	6.48	6.1				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS (SLIGHT EFFERVESCENT)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	18.1	457.4	0.13	6.48	5.5				
2	18.1	457.3	0.13	6.48	5.3				
3	18.1	457.9	0.13	6.48	4.2				
4	18.1	458.0	0.12	6.48	3.6				
Average:	18.1	457.7	0.13	6.48	4.7	#DIV/0!		2.8 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1511
 Sample Number: BDC-05-18 180502 Weather: 60'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.19 Time: 1445 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1450 End Purge: Date/Time: 5/ 2 /2018 @ 1510 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1453	18.0	493.5	0.26	6.12	41.5	LOW		<0.25	
1456	18.7	507	0.20	6.04	35.4				
1459	18.9	511	0.20	6.03	30.9				
1502	19.1	519	0.26	6.02	24.5				
1505	19.2	519	0.28	6.02	23.3				
1508	19.6	534	0.35	6.02	19.1				
1510	19.7	539	0.43	6.03	15.9				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR WITH SOME SUSPENDED SOLIDS, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	19.7	540	0.45	6.03	15.3				
2	19.7	540	0.46	6.03	15.1				
3	19.7	541	0.46	6.03	14.9				
4	19.7	541	0.46	6.03	14.8				
Average:	19.7	541	0.46	6.03	15.0	#DIV/0!		4.6 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/2/2018 @ 1337
 Sample Number: BDC-05-20 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.91 Time: 1308 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/2/2018 @ 1312 End Purge: Date/Time: 5/2/2018 @ 1325 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1315	17	445.4	0.86	6.61	-77.3				
1318	17	448.3	0.8	6.56	-82.9				
1321	16.9	451.2	0.81	6.56	-92.9				
1324	16.9	449.4	0.89	6.55	-95.5				
1327									
1330									

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR COLORLESS NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	16.6	449.5	0.9	6.55	-95.9				
2	16.8	449.5	0.89	6.55	-96.3				
3	16.8	449.3	0.89	6.55	-96.7				
4	16.8	449.3	0.88	6.55	-96.8				
Average:	16.8	449.4	0.89	6.55	-96.4	#DIV/0!		2.3 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1431
 Sample Number: BDC-05-21 180502 Weather: 60'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.82 Time: 1400 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1408 End Purge: Date/Time: 5/ 2 /2018 @ 1427 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1411	15.9	278.0	0.08	6.32	36.1	LOW	11.85	<0.25	
1414	16.1	303.5	0.08	6.32	31.1		11.85		
1417	16.4	3332.3	0.11	6.38	20.0			0.25	
1420	16.3	322.9	0.09	6.41	13.1				
1423	16.4	325.5	0.10	6.41	10.1				
1426	16.2	329.3	0.10	6.40	6.4			0.5	

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	16.2	328.8	0.10	6.40	6.0				
2	16.2	328.9	0.10	6.40	5.8				
3	16.2	329.0	0.10	6.40	5.5				
4	16.2	328.8	0.10	6.40	5.2				
Average:	16.2	328.9	0.10	6.40	5.6	#DIV/0!		4.0 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1417
 Sample Number: BDC-05-22 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.73 Time: 1354 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1356 End Purge: Date/Time: 5/ 2 /2018 @ 1415 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1359	17.6	368.4	1.48	6.56	-39.8				
1402	17.8	372.7	1.14	6.56	-57.4				
1405	17.7	373.8	0.91	6.52	-69.8				
1408	17.6	374.4	0.84	6.5	-77.5				
1411	17.4	373.5	0.84	6.5	-82.3				
1414	17.7	375.9	0.91	6.49	-86.9				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR COLORLESS NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	17.7	376.5	0.9	6.49	-87.5				
2	17.7	376.9	0.91	6.49	-87.9				
3	17.7	377.1	0.89	6.49	-88.2				
4	17.7	377.1	0.89	6.49	-88.7				
Average:	17.7	376.9	0.90	6.49	-88.1	#DIV/0!		3.4mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/ 2 /2018 @ 1346
 Sample Number: BDC-05-23 180502 Weather: 60'S, SUNNY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.26 Time: 1316 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/ 2 /2018 @ 1322 End Purge: Date/Time: 5/ 2 /2018 @ 1343 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1325	18.1	213.1	2.90	6.65	32.2	LOW	12.29	<0.25	
1328	18.2	213.9	2.84	6.54	33.2			<0.25	
1331	18.4	218.1	2.71	6.50	33.3		12.31	0.25	
1334	18.4	256.2	1.52	6.46	33.4				
1337	18.2	275.1	1.08	6.45	32.8				
1340	18.1	281.6	0.80	6.45	31.6				
1342	18.1	287.7	0.58	6.45	30.4				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	18.1	289.2	0.55	6.45	30.4				
2	18.1	290.0	0.54	6.45	30.2				
3	18.1	291.1	0.50	6.45	29.9				
4	18.1	292.5	0.46	6.45	29.6				
Average:	18.1	290.7	0.51	6.45	30.0	#DIV/0!		1.4 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Ti) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/2/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/2/2018 @ 1157
 Sample Number: BDC-05-24 180502 Weather: CLEAR
 Landau Representative: DSB

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.66 Time: 1127 Flow through cell vol. _____ GW Meter No.(s) 1
 Begin Purge: Date/Time: 5/2/2018 @ 1129 End Purge: Date/Time: 5/2/2018 @ 1143 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
1132	15.9	403.2	1.35	6.49	-70.4				
1135	15.8	412.3	1.08	6.49	-92.5				
1138	15.8	415.1	1.03	6.48	-98.8				
1141	15.9	416.6	1.14	6.48	-104.7				
1144									
1147									

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): COLORLESS CLOUDY NONS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.9	416.6	1.14	6.49	-105.7				
2	15.9	416.5	1.13	6.49	-105.8				
3	15.9	416.6	1.11	6.49	-106.4				
4	15.9	416.6	1.12	6.48	-106.5				
Average:	15.9	416.6	1.13	6.49	-106.1	#DIV/0!		3.2 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
1	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
1	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
1	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
2	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: DSB Date: 5/2/2018



22 May 2018

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

RE: Boeing Regional GW Developmental Center

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

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

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

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
18E0080	N/A

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

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

Analytical Resources, Inc.

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





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

Chain-of-Custody Record

Date 5/2/18
Page 1 of 2

18E0080

Project Name DC Regional Gov Project No. 0025217-099-039

Project Location/Event Summ-17 Area / May 2018

Sampler's Name Jeovani Huerta

Project Contact Chris Kimmel & Jen Parsons

Send Results To CKimmel & JParsons

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters							Observations/Comments						
					VOC (5260)	ANMEE (5260)	TCE (515310C)	Sulfate (5310C)	T/D Arsenic (E3000)	Copper	Lead		Mercury					
BDC-Dup3-180502	5/2/18	700	AW	9	X	X	X	X	X									
BDC-05-09-180502		711		9	X	X	X	X	X	Slight effervescent	X	Allow water samples to settle, collect aliquot from clear portion						
BDC-05-05-180502		717		7	X		X	X	X	Slight effervescent		NWTPH-Dx - run acid wash silica gel cleanup						
BDC-05-02-180502		756		9	X	X	X	X	X	Foamy		Analyze for EPH if no specific product identified						
BDC-05-07-180502		757		9	X	X	X	X	X	Foamy								
BDC-05-10-180502		851		9	X	X	X	X	X	Slight effervescent		VOC/BTEX/VPH (soil):						
BDC-05-04-180502		907		9	X	X	X	X	X	Slight effervescent		non-preserved						
BDC-05-11-180502		941		9	X	X	X	X	X	Slight effervescent		preserved w/methanol						
BDC-05-08-180502		957		7	X		X	X	X			preserved w/sodium bisulfate						
BDC-05-03-180502		1011		9	X	X	X	X	X	Effervescent		Freeze upon receipt						
BDC-05-19-180502		1057		9	X	X	X	X	X			Dissolved metal water samples field filtered						
BDC-05-12-180502		1101		9	X	X	X	X	X			Other: <u>PCP, TCE, CDCE, VC</u>						
BDC-05-24-180502		1157		9	X	X	X	X	X									
BDC-05-16-180502		1211		9	X	X	X	X	X									
BDC-05-15-180502		1237		9	X	X	X	X	X									
BDC-05-17-180502		1301		9	X	X	X	X	X	Slight effervescent		<u>Δ via 200.9 ICP-MS</u>						
BDC-05-20-180502		1337		9	X	X	X	X	X			<u>- Dissolved metals</u>						
BDC-05-23-180502		1346		7	X		X	X	X			<u>Sample was field filtered</u>						

Special Shipment/Handling or Storage Requirements on ice Method of Shipment Lab Pick up

Relinquished by
Signature [Signature]
Printed Name Jeovani Huerta
Company Landau Associates
Date 5/2/18 Time 1815

Received by
Signature [Signature]
Printed Name Sarah Walker
Company ARI
Date 05/03/18 Time 1436

Relinquished by
Signature _____
Printed Name _____
Company _____
Date _____ Time _____

Received by
Signature _____
Printed Name _____
Company _____
Date _____ Time _____



- 18E0080
- Seattle/Edmonds (425) 778-0907
 - Tacoma (253) 926-2493
 - Spokane (509) 327-9737
 - Portland (503) 542-1080
 - _____

Chain-of-Custody Record

Date 5/2/18
Page 2 of 2

Project Name <u>DC Regional Gov</u> Project No. <u>0025217-099-039</u>					Testing Parameters					Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____	
Project Location/Event <u>Sumu-17 Area / May 2018</u>					<u>VOC's (8260) X</u> <u>AMEE (8515) X</u> <u>TCC (8515) X</u> <u>Sulphate (E200) X</u> <u>T/D Arsenic & Copper X</u>						
Sampler's Name <u>Jedami Huerta</u>											
Project Contact <u>Chris Kimmel & Jen Parsons</u>											
Send Results To <u>CKimmel & J Parsons</u>											
Sample I.D.	Date	Time	Matrix	No. of Containers						Observations/Comments	
BDC-05-22-180502	5/2/18	1417	A&C	7	X		X	X	X		<input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPH-Dx - run acid wash silica gel cleanup <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other <input checked="" type="checkbox"/> <u>PCE, TCE, DCE, VC</u> <input checked="" type="checkbox"/> <u>via 200.8 ICP-MS</u> <input checked="" type="checkbox"/> <u>Dissolved metals</u> <input checked="" type="checkbox"/> <u>sample was field filtered</u>
BDC-05-21-180502		1431		9	X	X	X	X	X		
BDC-05-14-180502		1567		9	X	X	X	X	X		
BDC-05-18-180502		1511		9	X	X	X	X	X		
BDC-05-13-180502		1547		9	X	X	X	X	X		
Trip blanks	—	—	A&C	2	X						

Special Shipment/Handling or Storage Requirements on ice Method of Shipment lab pickup

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Jedami Huerta</u> Company <u>Landau Associates</u> Date <u>5/2/18</u> Time <u>1815</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Jacob Walter</u> Company <u>ARI</u> Date <u>05/03/18</u> Time <u>1436</u>	Relinquished by Signature _____ Printed Name _____ Company _____ Date _____ Time _____	Received by Signature _____ Printed Name _____ Company _____ Date _____ Time _____
---	--	--	--



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-Dup3-180502	18E0080-01	Water	02-May-2018 07:00	03-May-2018 14:36
BDC-Dup3-180502	18E0080-02	Water	02-May-2018 07:00	03-May-2018 14:36
BDC-05-09-180502	18E0080-03	Water	02-May-2018 07:11	03-May-2018 14:36
BDC-05-09-180502	18E0080-04	Water	02-May-2018 07:11	03-May-2018 14:36
BDC-05-05-180502	18E0080-05	Water	02-May-2018 07:17	03-May-2018 14:36
BDC-05-05-180502	18E0080-06	Water	02-May-2018 07:17	03-May-2018 14:36
BDC-05-02-180502	18E0080-07	Water	02-May-2018 07:56	03-May-2018 14:36
BDC-05-02-180502	18E0080-08	Water	02-May-2018 07:56	03-May-2018 14:36
BDC-05-07-180502	18E0080-09	Water	02-May-2018 07:57	03-May-2018 14:36
BDC-05-07-180502	18E0080-10	Water	02-May-2018 07:57	03-May-2018 14:36
BDC-05-10-180502	18E0080-11	Water	02-May-2018 08:51	03-May-2018 14:36
BDC-05-10-180502	18E0080-12	Water	02-May-2018 08:51	03-May-2018 14:36
BDC-05-04-180502	18E0080-13	Water	02-May-2018 09:07	03-May-2018 14:36
BDC-05-04-180502	18E0080-14	Water	02-May-2018 09:07	03-May-2018 14:36
BDC-05-11-180502	18E0080-15	Water	02-May-2018 09:41	03-May-2018 14:36
BDC-05-11-180502	18E0080-16	Water	02-May-2018 09:41	03-May-2018 14:36
BDC-05-08-180502	18E0080-17	Water	02-May-2018 09:57	03-May-2018 14:36
BDC-05-08-180502	18E0080-18	Water	02-May-2018 09:57	03-May-2018 14:36
BDC-05-03-180502	18E0080-19	Water	02-May-2018 10:11	03-May-2018 14:36
BDC-05-03-180502	18E0080-20	Water	02-May-2018 10:11	03-May-2018 14:36
BDC-05-19-180502	18E0080-21	Water	02-May-2018 10:57	03-May-2018 14:36
BDC-05-19-180502	18E0080-22	Water	02-May-2018 10:57	03-May-2018 14:36
BDC-05-12-180502	18E0080-23	Water	02-May-2018 11:01	03-May-2018 14:36
BDC-05-12-180502	18E0080-24	Water	02-May-2018 11:01	03-May-2018 14:36
BDC-05-24-180502	18E0080-25	Water	02-May-2018 11:57	03-May-2018 14:36
BDC-05-24-180502	18E0080-26	Water	02-May-2018 11:57	03-May-2018 14:36
BDC-05-16-180502	18E0080-27	Water	02-May-2018 12:11	03-May-2018 14:36
BDC-05-16-180502	18E0080-28	Water	02-May-2018 12:11	03-May-2018 14:36
BDC-05-15-180502	18E0080-29	Water	02-May-2018 12:37	03-May-2018 14:36
BDC-05-15-180502	18E0080-30	Water	02-May-2018 12:37	03-May-2018 14:36
BDC-05-17-180502	18E0080-31	Water	02-May-2018 13:01	03-May-2018 14:36
BDC-05-17-180502	18E0080-32	Water	02-May-2018 13:01	03-May-2018 14:36
BDC-05-20-180502	18E0080-33	Water	02-May-2018 13:37	03-May-2018 14:36
BDC-05-20-180502	18E0080-34	Water	02-May-2018 13:37	03-May-2018 14:36
BDC-05-23-180502	18E0080-35	Water	02-May-2018 13:46	03-May-2018 14:36
BDC-05-23-180502	18E0080-36	Water	02-May-2018 13:46	03-May-2018 14:36
BDC-05-22-180502	18E0080-37	Water	02-May-2018 14:17	03-May-2018 14:36
BDC-05-22-180502	18E0080-38	Water	02-May-2018 14:17	03-May-2018 14:36
BDC-05-21-180502	18E0080-39	Water	02-May-2018 14:31	03-May-2018 14:36



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502	18E0080-40	Water	02-May-2018 14:31	03-May-2018 14:36
BDC-05-14-180502	18E0080-41	Water	02-May-2018 15:07	03-May-2018 14:36
BDC-05-14-180502	18E0080-42	Water	02-May-2018 15:07	03-May-2018 14:36
BDC-05-18-180502	18E0080-43	Water	02-May-2018 15:11	03-May-2018 14:36
BDC-05-18-180502	18E0080-44	Water	02-May-2018 15:11	03-May-2018 14:36
BDC-05-13-180502	18E0080-45	Water	02-May-2018 15:47	03-May-2018 14:36
BDC-05-13-180502	18E0080-46	Water	02-May-2018 15:47	03-May-2018 14:36
Tripblanks	18E0080-47	Water	02-May-2018 07:00	03-May-2018 14:36



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

Case Narrative

Volatiles - EPA Method SW8260C

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

The LCS/LCSD percent recoveries and RPD were within control limits.

Samples 18E0080-05, 21 and 23 contained peabubbles at the time of the analysis and samples 18E0080-09, 11 and 29 contained large air bubbles.

Select samples were diluted due to foaming.

Volatile Gases - MEE by RSK175

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

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

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

The LCS/LCSD percent recoveries and RPD were within control limits with the exception of acetylene which is out of control high in the LCSD. The LCS is in control and no further action was taken.

Total and Dissolved Metals - EPA Method 200.8

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

Initial and continuing calibrations were within method requirements.

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



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

The LCS percent recoveries were within control limits.

The samples were allowed to settle and sample volume was collected from the clear portion per the COC.

Wet Chemistry

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

Initial and continuing calibrations were within method requirements.

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

The LCS percent recoveries were within control limits.

The samples were allowed to settle and sample volume was collected from the clear portion per the COC.



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]

Project Manager: Kelly Bottem

Project: Boeing Regional GW Developmental Center

Project Number: Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH
18E0080-01 A	VOA Vial, Clear, 40 mL	
18E0080-01 B	VOA Vial, Clear, 40 mL	
18E0080-01 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-01 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-01 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-01 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2 Y
18E0080-01 G	Small OJ, 500 mL	
18E0080-01 H	HDPE NM, 500 mL, 1:1 HNO3	< 2 P
18E0080-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2 P
18E0080-03 A	VOA Vial, Clear, 40 mL	
18E0080-03 B	VOA Vial, Clear, 40 mL	
18E0080-03 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-03 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-03 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-03 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2 P
18E0080-03 G	Small OJ, 500 mL	
18E0080-03 H	HDPE NM, 500 mL, 1:1 HNO3	< 2 P
18E0080-04 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2 P
18E0080-05 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-05 B	VOA Vial, Clear, 40 mL, HCL	
18E0080-05 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-05 D	Glass NM, Amber, 250 mL, 9N H2SO4	< 2 P
18E0080-05 E	Small OJ, 500 mL	
18E0080-05 F	HDPE NM, 500 mL, 1:1 HNO3	< 2 P
18E0080-06 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2 P
18E0080-07 A	VOA Vial, Clear, 40 mL	
18E0080-07 B	VOA Vial, Clear, 40 mL	
18E0080-07 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-07 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-07 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-07 F	Glass NM, Amber, 250 mL, 9N H2SO4	> 2 F
18E0080-07 G	Small OJ, 500 mL	
18E0080-07 H	HDPE NM, 500 mL, 1:1 HNO3	> 2 F
18E0080-08 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	> 2 F
18E0080-09 A	VOA Vial, Clear, 40 mL	



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-09 B	VOA Vial, Clear, 40 mL		
18E0080-09 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-09 G	Small OJ, 500 mL		
18E0080-09 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-10 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-11 A	VOA Vial, Clear, 40 mL		
18E0080-11 B	VOA Vial, Clear, 40 mL		
18E0080-11 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-11 G	Small OJ, 500 mL		
18E0080-11 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-12 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-13 A	VOA Vial, Clear, 40 mL		
18E0080-13 B	VOA Vial, Clear, 40 mL		
18E0080-13 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-13 G	Small OJ, 500 mL		
18E0080-13 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-14 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-15 A	VOA Vial, Clear, 40 mL		
18E0080-15 B	VOA Vial, Clear, 40 mL		
18E0080-15 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-15 G	Small OJ, 500 mL		
18E0080-15 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-16 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-17 A	VOA Vial, Clear, 40 mL, HCL		
18E0080-17 B	VOA Vial, Clear, 40 mL, HCL		



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-17 C	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-17 D		Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-17 E		Small OJ, 500 mL		
18E0080-17 F		HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-18 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-19 A		VOA Vial, Clear, 40 mL		
18E0080-19 B		VOA Vial, Clear, 40 mL		
18E0080-19 C		VOA Vial, Clear, 40 mL, HCL		
18E0080-19 D		VOA Vial, Clear, 40 mL, HCL		
18E0080-19 E	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-19 F		Glass NM, Amber, 250 mL, 9N H2SO4	> 2	f
18E0080-19 G		Small OJ, 500 mL		
18E0080-19 H		HDPE NM, 500 mL, 1:1 HNO3	> 2	f
18E0080-20 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	> 2	f
18E0080-21 A	b	VOA Vial, Clear, 40 mL		
18E0080-21 B		VOA Vial, Clear, 40 mL		
18E0080-21 C	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-21 D	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-21 E	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-21 F		Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-21 G		Small OJ, 500 mL		
18E0080-21 H		HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-22 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-23 A		VOA Vial, Clear, 40 mL		
18E0080-23 B		VOA Vial, Clear, 40 mL		
18E0080-23 C		VOA Vial, Clear, 40 mL, HCL		
18E0080-23 D		VOA Vial, Clear, 40 mL, HCL		
18E0080-23 E	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-23 F		Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-23 G		Small OJ, 500 mL		
18E0080-23 H		HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-24 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-25 A	b	VOA Vial, Clear, 40 mL		
18E0080-25 B	b	VOA Vial, Clear, 40 mL		
18E0080-25 C		VOA Vial, Clear, 40 mL, HCL		
18E0080-25 D	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-25 E	b	VOA Vial, Clear, 40 mL, HCL		



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]		Project Manager: Kelly Bottem	
Project: Boeing Regional GW Developmental Center		Project Number: Boeing Regional GW Developmental Center	
18E0080-25 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-25 G	Small OJ, 500 mL		
18E0080-25 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-26 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-27 A	VOA Vial, Clear, 40 mL		
18E0080-27 B	VOA Vial, Clear, 40 mL		
18E0080-27 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-27 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-27 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-27 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-27 G	Small OJ, 500 mL		
18E0080-27 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-28 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-29 A	b VOA Vial, Clear, 40 mL		
18E0080-29 B	b VOA Vial, Clear, 40 mL		
18E0080-29 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-29 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-29 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-29 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-29 G	Small OJ, 500 mL		
18E0080-29 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-30 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-31 A	VOA Vial, Clear, 40 mL		
18E0080-31 B	VOA Vial, Clear, 40 mL		
18E0080-31 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-31 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-31 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-31 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P
18E0080-31 G	Small OJ, 500 mL		
18E0080-31 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	P
18E0080-32 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	P
18E0080-33 A	VOA Vial, Clear, 40 mL		
18E0080-33 B	VOA Vial, Clear, 40 mL		
18E0080-33 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-33 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-33 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-33 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	P



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-33 G	Small OJ, 500 mL	
18E0080-33 H	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-34 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-35 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 B	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 D	Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-35 E	Small OJ, 500 mL	
18E0080-35 F	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-36 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-37 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-37 B	b VOA Vial, Clear, 40 mL, HCL	
18E0080-37 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-37 D	Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-37 E	Small OJ, 500 mL	
18E0080-37 F	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-38 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-39 A	VOA Vial, Clear, 40 mL	
18E0080-39 B	VOA Vial, Clear, 40 mL	
18E0080-39 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 F	Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-39 G	Small OJ, 500 mL	
18E0080-39 H	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-40 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-41 A	VOA Vial, Clear, 40 mL	
18E0080-41 B	b VOA Vial, Clear, 40 mL	
18E0080-41 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 D	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 F	b/b Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-41 G	Small OJ, 500 mL	
18E0080-41 H	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-42 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-43 A	VOA Vial, Clear, 40 mL	
18E0080-43 B	VOA Vial, Clear, 40 mL	



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]		Project Manager: Kelly Bottem	
Project: Boeing Regional GW Developmental Center		Project Number: Boeing Regional GW Developmental Center	
18E0080-43 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2	p
18E0080-43 G	Small OJ, 500 mL		
18E0080-43 H	HDPE NM, 500 mL, 1:1 HNO3	L2	p
18E0080-44 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2	p
18E0080-45 A	b VOA Vial, Clear, 40 mL		
18E0080-45 B	b VOA Vial, Clear, 40 mL		
18E0080-45 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2	p
18E0080-45 G	Small OJ, 500 mL		
18E0080-45 H	HDPE NM, 500 mL, 1:1 HNO3	L2	p
18E0080-46 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2	p
18E0080-47 A	b VOA Vial, Clear, 40 mL, HCL		
18E0080-47 B	b VOA Vial, Clear, 40 mL, HCL		

Preservation Confirmed By BF

Date 5/4/18

p = pass
f = fail
b = bubble



Cooler Receipt Form

ARI Client: London Edwards

Project Name: _____

COC No(s): _____ NA

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

Assigned ARI Job No: 18E0080

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4.1°C

Time: 1605 JSW cooler # 2 3 Temp Gun ID#: 0005306

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

Cooler Accepted by: JSW Date: 05/03/18 Time: 1436

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

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

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO BF

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI... NA 4/25/18

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


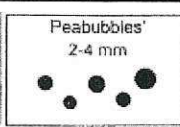

Samples Logged by: BF Date: 5/4/18 Time: 1135

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

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

Additional Notes, Discrepancies, & Resolutions:
BOC-05-10-190502 - 1 vial missing time

By: _____ Date: _____

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



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]

Project Manager: Kelly Bottem

Project: Boeing Regional GW Developmental Center

Project Number: Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH
18E0080-01 A	VOA Vial, Clear, 40 mL	
18E0080-01 B	VOA Vial, Clear, 40 mL	
18E0080-01 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-01 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-01 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-01 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2 p
18E0080-01 G	Small OJ, 500 mL	
18E0080-01 H	HDPE NM, 500 mL, 1:1 HNO3	< 2 p
18E0080-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2 p
18E0080-03 A	VOA Vial, Clear, 40 mL	
18E0080-03 B	VOA Vial, Clear, 40 mL	
18E0080-03 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-03 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-03 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-03 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2 p
18E0080-03 G	Small OJ, 500 mL	
18E0080-03 H	HDPE NM, 500 mL, 1:1 HNO3	< 2 p
18E0080-04 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2 p
18E0080-05 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-05 B	VOA Vial, Clear, 40 mL, HCL	
18E0080-05 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-05 D	Glass NM, Amber, 250 mL, 9N H2SO4	< 2 p
18E0080-05 E	Small OJ, 500 mL	
18E0080-05 F	HDPE NM, 500 mL, 1:1 HNO3	< 2 p
18E0080-06 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2 p
18E0080-07 A	VOA Vial, Clear, 40 mL	
18E0080-07 B	VOA Vial, Clear, 40 mL	
18E0080-07 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-07 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-07 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-07 F	Glass NM, Amber, 250 mL, 9N H2SO4	> 2 F (1)
18E0080-07 G	Small OJ, 500 mL	
18E0080-07 H	HDPE NM, 500 mL, 1:1 HNO3	> 2 F
18E0080-08 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	> 2 F
18E0080-09 A	VOA Vial, Clear, 40 mL	



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]		Project Manager: Kelly Bottem	
Project: Boeing Regional GW Developmental Center		Project Number: Boeing Regional GW Developmental Center	
18E0080-09 B	VOA Vial, Clear, 40 mL		
18E0080-09 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-09 G	Small OJ, 500 mL		
18E0080-09 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-10 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-11 A	VOA Vial, Clear, 40 mL		
18E0080-11 B	VOA Vial, Clear, 40 mL		
18E0080-11 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-11 G	Small OJ, 500 mL		
18E0080-11 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-12 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-13 A	VOA Vial, Clear, 40 mL		
18E0080-13 B	VOA Vial, Clear, 40 mL		
18E0080-13 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-13 G	Small OJ, 500 mL		
18E0080-13 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-14 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-15 A	VOA Vial, Clear, 40 mL		
18E0080-15 B	VOA Vial, Clear, 40 mL		
18E0080-15 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-15 G	Small OJ, 500 mL		
18E0080-15 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-16 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-17 A	VOA Vial, Clear, 40 mL, HCL		
18E0080-17 B	VOA Vial, Clear, 40 mL, HCL		



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-17 C	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-17 D		Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-17 E		Small OJ, 500 mL		
18E0080-17 F		HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-18 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-19 A		VOA Vial, Clear, 40 mL		
18E0080-19 B		VOA Vial, Clear, 40 mL		
18E0080-19 C		VOA Vial, Clear, 40 mL, HCL		
18E0080-19 D		VOA Vial, Clear, 40 mL, HCL		
18E0080-19 E	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-19 F		Glass NM, Amber, 250 mL, 9N H2SO4	> 2	f (D)
18E0080-19 G		Small OJ, 500 mL		
18E0080-19 H		HDPE NM, 500 mL, 1:1 HNO3	> 2	f
18E0080-20 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	> 2	f
18E0080-21 A	b	VOA Vial, Clear, 40 mL		
18E0080-21 B		VOA Vial, Clear, 40 mL		
18E0080-21 C	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-21 D	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-21 E	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-21 F		Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-21 G		Small OJ, 500 mL		
18E0080-21 H		HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-22 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-23 A		VOA Vial, Clear, 40 mL		
18E0080-23 B		VOA Vial, Clear, 40 mL		
18E0080-23 C		VOA Vial, Clear, 40 mL, HCL		
18E0080-23 D		VOA Vial, Clear, 40 mL, HCL		
18E0080-23 E	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-23 F		Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-23 G		Small OJ, 500 mL		
18E0080-23 H		HDPE NM, 500 mL, 1:1 HNO3	< 2	p ^{FF}
18E0080-24 A		HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-25 A	b	VOA Vial, Clear, 40 mL		
18E0080-25 B	b	VOA Vial, Clear, 40 mL		
18E0080-25 C		VOA Vial, Clear, 40 mL, HCL		
18E0080-25 D	b	VOA Vial, Clear, 40 mL, HCL		
18E0080-25 E	b	VOA Vial, Clear, 40 mL, HCL		

Reviewed By _____ Date _____



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-25 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-25 G	Small OJ, 500 mL	
18E0080-25 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-26 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-27 A	VOA Vial, Clear, 40 mL	
18E0080-27 B	VOA Vial, Clear, 40 mL	
18E0080-27 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-27 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-27 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-27 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-27 G	Small OJ, 500 mL	
18E0080-27 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-28 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-29 A	b VOA Vial, Clear, 40 mL	
18E0080-29 B	b VOA Vial, Clear, 40 mL	
18E0080-29 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-29 D	b VOA Vial, Clear, 40 mL, HCL	
18E0080-29 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-29 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-29 G	Small OJ, 500 mL	
18E0080-29 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-30 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-31 A	VOA Vial, Clear, 40 mL	
18E0080-31 B	VOA Vial, Clear, 40 mL	
18E0080-31 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-31 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-31 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-31 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-31 G	Small OJ, 500 mL	
18E0080-31 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-32 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-33 A	VOA Vial, Clear, 40 mL	
18E0080-33 B	VOA Vial, Clear, 40 mL	
18E0080-33 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-33 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-33 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-33 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-33 G	Small OJ, 500 mL	
18E0080-33 H	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-34 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-35 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 B	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 D	Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-35 E	Small OJ, 500 mL	
18E0080-35 F	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-36 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-37 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-37 B	b VOA Vial, Clear, 40 mL, HCL	
18E0080-37 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-37 D	Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-37 E	Small OJ, 500 mL	
18E0080-37 F	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-38 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-39 A	VOA Vial, Clear, 40 mL	
18E0080-39 B	VOA Vial, Clear, 40 mL	
18E0080-39 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 F	Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-39 G	Small OJ, 500 mL	
18E0080-39 H	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-40 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-41 A	VOA Vial, Clear, 40 mL	
18E0080-41 B	b VOA Vial, Clear, 40 mL	
18E0080-41 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 D	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 F	b Glass NM, Amber, 250 mL, 9N H2SO4	L Z P
18E0080-41 G	Small OJ, 500 mL	
18E0080-41 H	HDPE NM, 500 mL, 1:1 HNO3	L Z P
18E0080-42 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L Z P
18E0080-43 A	VOA Vial, Clear, 40 mL	
18E0080-43 B	VOA Vial, Clear, 40 mL	



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]		Project Manager: Kelly Bottem	
Project: Boeing Regional GW Developmental Center		Project Number: Boeing Regional GW Developmental Center	
18E0080-43 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-43 G	Small OJ, 500 mL		
18E0080-43 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-44 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-45 A	b VOA Vial, Clear, 40 mL		
18E0080-45 B	b VOA Vial, Clear, 40 mL		
18E0080-45 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-45 G	Small OJ, 500 mL		
18E0080-45 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-46 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-47 A	b VOA Vial, Clear, 40 mL, HCL		
18E0080-47 B	b VOA Vial, Clear, 40 mL, HCL		

Preservation Confirmed By BF

Date 5/4/18

p = pass
f = fail
b = bubble

① preserved pH < 2
with 2mL 9N H2SO4
KAC 5/4/18



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]

Project Manager: Kelly Bottem

Project: Boeing Regional GW Developmental Center

Project Number: Boeing Regional GW Developmental Center

Preservation Confirmation

Container ID	Container Type	pH	
18E0080-01 A	VOA Vial, Clear, 40 mL		
18E0080-01 B	VOA Vial, Clear, 40 mL		
18E0080-01 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-01 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-01 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-01 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-01 G	Small OJ, 500 mL		
18E0080-01 H	HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-03 A	VOA Vial, Clear, 40 mL		
18E0080-03 B	VOA Vial, Clear, 40 mL		
18E0080-03 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-03 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-03 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-03 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-03 G	Small OJ, 500 mL		
18E0080-03 H	HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-04 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-05 A	VOA Vial, Clear, 40 mL, HCL		
18E0080-05 B	VOA Vial, Clear, 40 mL, HCL		
18E0080-05 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-05 D	Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-05 E	Small OJ, 500 mL		
18E0080-05 F	HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-06 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-07 A	VOA Vial, Clear, 40 mL		
18E0080-07 B	VOA Vial, Clear, 40 mL		
18E0080-07 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-07 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-07 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-07 F	Glass NM, Amber, 250 mL, 9N H2SO4	> 2	f
18E0080-07 G	Small OJ, 500 mL		
18E0080-07 H	HDPE NM, 500 mL, 1:1 HNO3	> 2	f
18E0080-08 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	> 2	f
18E0080-09 A	VOA Vial, Clear, 40 mL		



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-09 B	VOA Vial, Clear, 40 mL		
18E0080-09 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-09 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-09 G	Small OJ, 500 mL		
18E0080-09 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-10 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-11 A	VOA Vial, Clear, 40 mL		
18E0080-11 B	VOA Vial, Clear, 40 mL		
18E0080-11 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-11 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-11 G	Small OJ, 500 mL		
18E0080-11 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-12 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-13 A	VOA Vial, Clear, 40 mL		
18E0080-13 B	VOA Vial, Clear, 40 mL		
18E0080-13 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-13 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-13 G	Small OJ, 500 mL		
18E0080-13 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-14 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-15 A	VOA Vial, Clear, 40 mL		
18E0080-15 B	VOA Vial, Clear, 40 mL		
18E0080-15 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-15 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2	p
18E0080-15 G	Small OJ, 500 mL		
18E0080-15 H	HDPE NM, 500 mL, 1:1 HNO3	L 2	p
18E0080-16 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2	p
18E0080-17 A	VOA Vial, Clear, 40 mL, HCL		
18E0080-17 B	VOA Vial, Clear, 40 mL, HCL		



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]		Project Manager: Kelly Bottem	
Project: Boeing Regional GW Developmental Center		Project Number: Boeing Regional GW Developmental Center	
18E0080-17 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-17 D	Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-17 E	Small OJ, 500 mL		
18E0080-17 F	HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-18 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-19 A	VOA Vial, Clear, 40 mL		
18E0080-19 B	VOA Vial, Clear, 40 mL		
18E0080-19 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-19 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-19 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-19 F	Glass NM, Amber, 250 mL, 9N H2SO4	> 2	f
18E0080-19 G	Small OJ, 500 mL		
18E0080-19 H	HDPE NM, 500 mL, 1:1 HNO3	> 2	f
18E0080-20 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	> 2	f
18E0080-21 A	b VOA Vial, Clear, 40 mL		
18E0080-21 B	VOA Vial, Clear, 40 mL		
18E0080-21 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-21 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-21 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-21 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-21 G	Small OJ, 500 mL		
18E0080-21 H	HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-22 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-23 A	VOA Vial, Clear, 40 mL		
18E0080-23 B	VOA Vial, Clear, 40 mL		
18E0080-23 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-23 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-23 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-23 F	Glass NM, Amber, 250 mL, 9N H2SO4	< 2	p
18E0080-23 G	Small OJ, 500 mL		
18E0080-23 H	HDPE NM, 500 mL, 1:1 HNO3	< 2	p
18E0080-24 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	< 2	p
18E0080-25 A	b VOA Vial, Clear, 40 mL		
18E0080-25 B	b VOA Vial, Clear, 40 mL		
18E0080-25 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-25 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-25 E	b VOA Vial, Clear, 40 mL, HCL		

Reviewed By _____

Date _____



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-25 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-25 G	Small OJ, 500 mL	
18E0080-25 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-26 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-27 A	VOA Vial, Clear, 40 mL	
18E0080-27 B	VOA Vial, Clear, 40 mL	
18E0080-27 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-27 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-27 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-27 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-27 G	Small OJ, 500 mL	
18E0080-27 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-28 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-29 A	b VOA Vial, Clear, 40 mL	
18E0080-29 B	b VOA Vial, Clear, 40 mL	
18E0080-29 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-29 D	b VOA Vial, Clear, 40 mL, HCL	
18E0080-29 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-29 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-29 G	Small OJ, 500 mL	
18E0080-29 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-30 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-31 A	VOA Vial, Clear, 40 mL	
18E0080-31 B	VOA Vial, Clear, 40 mL	
18E0080-31 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-31 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-31 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-31 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-31 G	Small OJ, 500 mL	
18E0080-31 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-32 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-33 A	VOA Vial, Clear, 40 mL	
18E0080-33 B	VOA Vial, Clear, 40 mL	
18E0080-33 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-33 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-33 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-33 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]	Project Manager: Kelly Bottem
Project: Boeing Regional GW Developmental Center	Project Number: Boeing Regional GW Developmental Center

18E0080-33 G	Small OJ, 500 mL	
18E0080-33 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-34 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-35 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 B	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-35 D	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-35 E	Small OJ, 500 mL	
18E0080-35 F	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-36 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-37 A	VOA Vial, Clear, 40 mL, HCL	
18E0080-37 B	b VOA Vial, Clear, 40 mL, HCL	
18E0080-37 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-37 D	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-37 E	Small OJ, 500 mL	
18E0080-37 F	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-38 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-39 A	VOA Vial, Clear, 40 mL	
18E0080-39 B	VOA Vial, Clear, 40 mL	
18E0080-39 C	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 D	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 E	VOA Vial, Clear, 40 mL, HCL	
18E0080-39 F	Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-39 G	Small OJ, 500 mL	
18E0080-39 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-40 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-41 A	VOA Vial, Clear, 40 mL	
18E0080-41 B	b VOA Vial, Clear, 40 mL	
18E0080-41 C	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 D	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 E	b VOA Vial, Clear, 40 mL, HCL	
18E0080-41 F	FF Glass NM, Amber, 250 mL, 9N H2SO4	L 2 P
18E0080-41 G	Small OJ, 500 mL	
18E0080-41 H	HDPE NM, 500 mL, 1:1 HNO3	L 2 P
18E0080-42 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L 2 P
18E0080-43 A	VOA Vial, Clear, 40 mL	
18E0080-43 B	VOA Vial, Clear, 40 mL	



WORK ORDER

18E0080

Client: The Boeing Company [Developmental Center]		Project Manager: Kelly Bottem	
Project: Boeing Regional GW Developmental Center		Project Number: Boeing Regional GW Developmental Center	
18E0080-43 C	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 D	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 E	VOA Vial, Clear, 40 mL, HCL		
18E0080-43 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2	P
18E0080-43 G	Small OJ, 500 mL		
18E0080-43 H	HDPE NM, 500 mL, 1:1 HNO3	L2	P
18E0080-44 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2	P
18E0080-45 A	b VOA Vial, Clear, 40 mL		
18E0080-45 B	b VOA Vial, Clear, 40 mL		
18E0080-45 C	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 D	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 E	b VOA Vial, Clear, 40 mL, HCL		
18E0080-45 F	Glass NM, Amber, 250 mL, 9N H2SO4	L2	P
18E0080-45 G	Small OJ, 500 mL		
18E0080-45 H	HDPE NM, 500 mL, 1:1 HNO3	L2	P
18E0080-46 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2	P
18E0080-47 A	b VOA Vial, Clear, 40 mL, HCL		
18E0080-47 B	b VOA Vial, Clear, 40 mL, HCL		

Preservation Confirmed By BF

Date 5/4/18

p = pass
f = fail
b = bubble

preserved
5/11/18 DP



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-Dup3-180502
18E0080-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 07:00

Instrument: NT3

Analyzed: 07-May-2018 13:32

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.45	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.8	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	97.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	94.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	104	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-Dup3-180502
18E0080-01 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:00

Instrument: FID6

Analyzed: 09-May-2018 10:29

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224 Sample Size: 10 mL
Prepared: 09-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	9090	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	106	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-Dup3-180502
18E0080-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:00

Instrument: ICPMS2

Analyzed: 14-May-2018 21:45

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	6.84	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-Dup3-180502
18E0080-01 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 07:00

Instrument: TOC-LCSH

Analyzed: 09-May-2018 08:00

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	18.23	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-Dup3-180502
18E0080-01RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:00

Instrument: FID6

Analyzed: 15-May-2018 11:12

Sample Preparation:

Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288
Prepared: 09-May-2018

Sample Size: 1 mL
Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	13200	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	103	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-Dup3-180502
18E0080-01RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 07:00

Instrument: DX500

Analyzed: 10-May-2018 20:02

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.105	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-Dup3-180502
18E0080-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:00

Instrument: ICPMS2

Analyzed: 11-May-2018 19:00

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	8.64	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-09-180502
18E0080-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 07:11

Instrument: NT3

Analyzed: 07-May-2018 13:58

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	3.32	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.90	ug/L	
Trichloroethene	79-01-6	1	0.20	0.33	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	97.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-09-180502
18E0080-03 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:11

Instrument: FID6

Analyzed: 09-May-2018 10:43

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224 Sample Size: 10 mL
Prepared: 09-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	18300	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	94.5	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-09-180502
18E0080-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:11

Instrument: ICPMS2

Analyzed: 14-May-2018 21:16

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	7.66	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-09-180502
18E0080-03 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 07:11

Instrument: TOC-LCSH

Analyzed: 11-May-2018 17:14

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	38.83	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-09-180502
18E0080-03RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:11

Instrument: FID6

Analyzed: 15-May-2018 12:47

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	15300	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	102	%	



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-09-180502
18E0080-03RE2 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/02/2018 07:11

Instrument: DX500 Analyzed: 10-May-2018 20:19

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178 Sample Size: 5 mL
Prepared: 07-May-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.195	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-09-180502
18E0080-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:11

Instrument: ICPMS2

Analyzed: 11-May-2018 18:36

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	7.30	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-05-180502
18E0080-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 07:17

Instrument: NT3

Analyzed: 07-May-2018 14:24

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	0.54	ug/L	
Tetrachloroethene	127-18-4	1	0.20	0.32	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.3	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	97.4	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-05-180502

18E0080-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:17

Instrument: ICPMS2

Analyzed: 14-May-2018 21:21

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	0.625	ug/L	
Copper	7440-50-8	1	0.340	0.500	2.49	ug/L	



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-05-180502
18E0080-05 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/02/2018 07:17

Instrument: DX500 Analyzed: 07-May-2018 21:37

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178 Sample Size: 5 mL
Prepared: 07-May-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	100	10.0	10.0	24.6	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-05-180502
18E0080-05 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 07:17

Instrument: TOC-LCSH

Analyzed: 11-May-2018 17:41

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	1.92	mg/L	



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-05-180502
18E0080-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:17

Instrument: ICPMS2

Analyzed: 11-May-2018 18:41

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	0.346	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	1.90	ug/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-02-180502
18E0080-07 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 07:56

Instrument: NT3

Analyzed: 07-May-2018 14:52

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 1 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	15.4	ug/L	
Trichloroethene	79-01-6	1	2.00	3.75	ug/L	
Tetrachloroethene	127-18-4	1	2.00	3.70	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	98.3	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.7	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	102	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-02-180502
18E0080-07 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:56

Instrument: FID6

Analyzed: 09-May-2018 10:57

Sample Preparation:

Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224
Prepared: 09-May-2018

Sample Size: 10 mL
Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	9570	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	89.1	%	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-02-180502
18E0080-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:56

Instrument: ICPMS2

Analyzed: 15-May-2018 23:00

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	100	2.20	20.0	38.6	ug/L	D
Copper	7440-50-8	100	34.0	50.0	ND	ug/L	U



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-02-180502
18E0080-07 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/02/2018 07:56

Instrument: DX500 Analyzed: 07-May-2018 21:54

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178 Sample Size: 5 mL
Prepared: 07-May-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	100	10.0	10.0	135	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-02-180502
18E0080-07RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:56

Instrument: FID6

Analyzed: 15-May-2018 11:40

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	10200	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	104	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-02-180502
18E0080-07RE1 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 07:56

Instrument: TOC-LCSH

Analyzed: 12-May-2018 20:18

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		50	25.00	25.00	9629	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-02-180502
18E0080-08 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:56

Instrument: ICPMS2

Analyzed: 15-May-2018 23:04

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	100	2.20	20.0	35.1	ug/L	D
Copper, Dissolved	7440-50-8	100	34.0	50.0	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-07-180502
18E0080-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 07:57

Instrument: NT3

Analyzed: 07-May-2018 15:20

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 1 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	3.30	ug/L	
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	98.4	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	101	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	97.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	101	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-07-180502
18E0080-09 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:57

Instrument: FID6

Analyzed: 09-May-2018 11:11

Sample Preparation:

Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224
Prepared: 09-May-2018

Sample Size: 10 mL
Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	21200	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			<i>72-122 %</i>	<i>93.1</i>	<i>%</i>	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-07-180502
18E0080-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:57

Instrument: ICPMS2

Analyzed: 15-May-2018 22:16

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.440	4.00	7.34	ug/L	D
Copper	7440-50-8	20	6.80	10.0	22.2	ug/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-07-180502
18E0080-09 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 07:57

Instrument: TOC-LCSH

Analyzed: 11-May-2018 18:36

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		50	25.00	25.00	626.6	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-07-180502
18E0080-09RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 07:57

Instrument: FID6

Analyzed: 15-May-2018 13:01

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	16100	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	101	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-07-180502
18E0080-09RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 07:57

Instrument: DX500

Analyzed: 09-May-2018 21:04

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-07-180502
18E0080-10 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 07:57

Instrument: ICPMS2

Analyzed: 15-May-2018 22:21

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	20	0.440	4.00	5.54	ug/L	D
Copper, Dissolved	7440-50-8	20	6.80	10.0	ND	ug/L	U



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-10-180502
18E0080-11 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 08:51

Instrument: NT3

Analyzed: 07-May-2018 15:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 1 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	7.43	ug/L	
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.8	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.5	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	104	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-10-180502
18E0080-11 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 08:51

Instrument: FID6

Analyzed: 09-May-2018 11:24

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224 Sample Size: 10 mL
Prepared: 09-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	26200	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	91.0	%	



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

Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-10-180502
18E0080-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 08:51

Instrument: ICPMS2

Analyzed: 15-May-2018 22:25

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.440	4.00	35.6	ug/L	D
Copper	7440-50-8	20	6.80	10.0	62.7	ug/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-10-180502
18E0080-11 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 08:51

Instrument: TOC-LCSH

Analyzed: 11-May-2018 19:02

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		50	25.00	25.00	1453	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-10-180502
18E0080-11RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 08:51

Instrument: FID6

Analyzed: 15-May-2018 12:08

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	13800	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	103	%	



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-10-180502
18E0080-11RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 08:51

Instrument: DX500

Analyzed: 09-May-2018 21:21

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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Reported:
22-May-2018 15:37

BDC-05-10-180502
18E0080-12 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 08:51

Instrument: ICPMS2

Analyzed: 14-May-2018 23:38

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	100	2.20	20.0	22.4	ug/L	D
Copper, Dissolved	7440-50-8	100	34.0	50.0	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-04-180502
18E0080-13 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 09:07

Instrument: NT3

Analyzed: 07-May-2018 16:16

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 1 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	4.10	ug/L	
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	100	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	99.1	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	102	%	



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PO Box 3703 MS 2R-96
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Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-04-180502
18E0080-13 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 09:07

Instrument: FID6

Analyzed: 09-May-2018 11:38

Sample Preparation:

Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224
Prepared: 09-May-2018

Sample Size: 10 mL
Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	14200	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			<i>72-122 %</i>	<i>86.1</i>	<i>%</i>	



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PO Box 3703 MS 2R-96
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Reported:
22-May-2018 15:37

BDC-05-04-180502
18E0080-13 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 09:07

Instrument: ICPMS2

Analyzed: 15-May-2018 22:30

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.440	4.00	12.2	ug/L	D
Copper	7440-50-8	20	6.80	10.0	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-04-180502
18E0080-13 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 09:07

Instrument: TOC-LCSH

Analyzed: 11-May-2018 19:28

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		20	10.00	10.00	1246	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-04-180502
18E0080-13RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 09:07

Instrument: FID6

Analyzed: 15-May-2018 13:14

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	14000	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	105	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-04-180502
18E0080-13RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 09:07

Instrument: DX500

Analyzed: 09-May-2018 22:11

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-04-180502
18E0080-14 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 09:07

Instrument: ICPMS2

Analyzed: 15-May-2018 22:34

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	20	0.440	4.00	7.22	ug/L	D
Copper, Dissolved	7440-50-8	20	6.80	10.0	ND	ug/L	U



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-11-180502
18E0080-15 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 09:41

Instrument: NT3

Analyzed: 07-May-2018 16:42

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	1.12	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.9	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	102	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-11-180502
18E0080-15 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 09:41

Instrument: FID6

Analyzed: 09-May-2018 11:52

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224
Prepared: 09-May-2018

Sample Size: 10 mL
Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	14800	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	94.7	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-11-180502
18E0080-15 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 09:41

Instrument: ICPMS2

Analyzed: 14-May-2018 21:26

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	13.5	ug/L	
Copper	7440-50-8	1	0.340	0.500	0.886	ug/L	



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-11-180502
18E0080-15 (Water)

Wet Chemistry

Method: SM 5310 B-00 Sampled: 05/02/2018 09:41

Instrument: TOC-LCSH Analyzed: 11-May-2018 19:54

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233 Sample Size: 20 mL
Prepared: 08-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		10	5.00	5.00	40.80	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-11-180502
18E0080-15RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 09:41

Instrument: FID6

Analyzed: 15-May-2018 15:40

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	14800	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	104	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-11-180502
18E0080-15RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 09:41

Instrument: DX500

Analyzed: 10-May-2018 20:36

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.107	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-11-180502
18E0080-16 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 09:41

Instrument: ICPMS2

Analyzed: 11-May-2018 18:46

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	12.9	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-08-180502
18E0080-17 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 09:57

Instrument: NT3

Analyzed: 07-May-2018 17:08

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.5	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	106	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-08-180502
18E0080-17 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 09:57

Instrument: ICPMS2

Analyzed: 14-May-2018 21:31

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	12.1	ug/L	
Copper	7440-50-8	1	0.340	0.500	4.98	ug/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-08-180502
18E0080-17 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 09:57

Instrument: TOC-LCSH

Analyzed: 11-May-2018 20:23

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	5.97	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-08-180502
18E0080-17RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 09:57

Instrument: DX500

Analyzed: 10-May-2018 20:52

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.137	mg/L	



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-08-180502
18E0080-18 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 09:57

Instrument: ICPMS2

Analyzed: 11-May-2018 18:50

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	7.62	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-03-180502
18E0080-19 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 10:11

Instrument: NT3

Analyzed: 07-May-2018 17:35

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 1 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	2.49	ug/L	
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	101	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	97.5	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	98.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-03-180502
18E0080-19 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 10:11

Instrument: FID6

Analyzed: 09-May-2018 12:06

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224 Sample Size: 10 mL
Prepared: 09-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	12100	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	83.8	%	



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Reported:
22-May-2018 15:37

BDC-05-03-180502
18E0080-19 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 10:11

Instrument: ICPMS2

Analyzed: 15-May-2018 23:09

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	100	2.20	20.0	27.2	ug/L	D
Copper	7440-50-8	100	34.0	50.0	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-03-180502
18E0080-19 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 10:11

Instrument: TOC-LCSH

Analyzed: 11-May-2018 20:48

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		50	25.00	25.00	4463	mg/L	D



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-03-180502
18E0080-19RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 10:11

Instrument: FID6

Analyzed: 15-May-2018 15:17

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	9070	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	102	%	



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-03-180502
18E0080-19RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 10:11

Instrument: DX500

Analyzed: 09-May-2018 23:01

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-03-180502
18E0080-20 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 10:11

Instrument: ICPMS2

Analyzed: 15-May-2018 23:13

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	100	2.20	20.0	18.5	ug/L	J, D
Copper, Dissolved	7440-50-8	100	34.0	50.0	ND	ug/L	U



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-19-180502
18E0080-21 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 10:57

Instrument: NT3

Analyzed: 07-May-2018 18:01

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	95.8	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	97.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	106	%	



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

Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-19-180502
18E0080-21 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 10:57

Instrument: FID6

Analyzed: 09-May-2018 12:20

Sample Preparation:

Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224
Prepared: 09-May-2018

Sample Size: 10 mL
Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	17500	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			<i>72-122 %</i>	<i>103</i>	<i>%</i>	



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

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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-19-180502
18E0080-21 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 10:57

Instrument: ICPMS2

Analyzed: 14-May-2018 22:12

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	10.5	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-19-180502
18E0080-21 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 10:57

Instrument: TOC-LCSH

Analyzed: 11-May-2018 21:57

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233 Sample Size: 20 mL
Prepared: 08-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	22.62	mg/L	



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

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-19-180502
18E0080-21RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 10:57

Instrument: FID6

Analyzed: 15-May-2018 13:56

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	13800	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	104	%	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-19-180502
18E0080-21RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 10:57

Instrument: DX500

Analyzed: 10-May-2018 21:09

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.124	mg/L	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-19-180502
18E0080-22 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 10:57

Instrument: ICPMS2

Analyzed: 11-May-2018 19:28

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	7.81	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-12-180502
18E0080-23 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 11:01

Instrument: NT3

Analyzed: 07-May-2018 18:27

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.46	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	104	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	97.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	95.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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

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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-12-180502
18E0080-23 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 11:01

Instrument: FID6

Analyzed: 09-May-2018 12:33

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0224 Sample Size: 10 mL
Prepared: 09-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	13400	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	97.9	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-12-180502
18E0080-23 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 11:01

Instrument: ICPMS2

Analyzed: 14-May-2018 22:17

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	5.83	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-12-180502
18E0080-23 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 11:01

Instrument: TOC-LCSH

Analyzed: 11-May-2018 22:17

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	19.37	mg/L	



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

Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-12-180502
18E0080-23RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 11:01

Instrument: FID6

Analyzed: 15-May-2018 14:10

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0288 Sample Size: 1 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	14200	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	101	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-12-180502
18E0080-23RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 11:01

Instrument: DX500

Analyzed: 10-May-2018 21:26

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.104	mg/L	



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

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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-12-180502
18E0080-24 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 11:01

Instrument: ICPMS2

Analyzed: 11-May-2018 19:33

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	7.81	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-24-180502
18E0080-25 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 11:57

Instrument: NT3

Analyzed: 07-May-2018 18:53

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	100	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	97.8	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	99.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-24-180502
18E0080-25 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 11:57

Instrument: FID6

Analyzed: 10-May-2018 15:42

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	9310	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	110	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-24-180502
18E0080-25 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 11:57

Instrument: ICPMS2

Analyzed: 14-May-2018 22:22

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	0.808	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-24-180502
18E0080-25 (Water)

Wet Chemistry

Method: SM 5310 B-00 Sampled: 05/02/2018 11:57

Instrument: TOC-LCSH Analyzed: 11-May-2018 22:37

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233 Sample Size: 20 mL
Prepared: 08-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	10.90	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-24-180502
18E0080-25RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 11:57

Instrument: FID6

Analyzed: 11-May-2018 11:12

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	7240	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	111	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-24-180502
18E0080-25RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 11:57

Instrument: DX500

Analyzed: 10-May-2018 21:43

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-24-180502
18E0080-26 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 11:57

Instrument: ICPMS2

Analyzed: 11-May-2018 19:38

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	0.795	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-16-180502
18E0080-27 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 12:11

Instrument: NT3

Analyzed: 07-May-2018 19:19

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.44	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	101	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	95.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	107	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-16-180502
18E0080-27 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 12:11

Instrument: FID6

Analyzed: 10-May-2018 13:08

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	11300	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	102	%	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-16-180502
18E0080-27 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 12:11

Instrument: ICPMS2

Analyzed: 14-May-2018 22:27

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	27.1	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-16-180502
18E0080-27 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 12:11

Instrument: TOC-LCSH

Analyzed: 11-May-2018 22:57

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233 Sample Size: 20 mL
Prepared: 08-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	13.06	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-16-180502
18E0080-27RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 12:11

Instrument: FID6

Analyzed: 11-May-2018 11:26

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	12200	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	109	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-16-180502
18E0080-27RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 12:11

Instrument: DX500

Analyzed: 10-May-2018 22:00

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0178
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-16-180502
18E0080-28 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 12:11

Instrument: ICPMS2

Analyzed: 11-May-2018 19:43

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	26.0	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-15-180502
18E0080-29 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 12:37

Instrument: NT3

Analyzed: 07-May-2018 19:45

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.20	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	107	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	97.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	104	%	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-15-180502
18E0080-29 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 12:37

Instrument: FID6

Analyzed: 10-May-2018 13:22

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	12700	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	104	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-15-180502
18E0080-29 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 12:37

Instrument: ICPMS2

Analyzed: 14-May-2018 22:37

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	44.0	ug/L	
Copper	7440-50-8	1	0.340	0.500	0.373	ug/L	J



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-15-180502
18E0080-29 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 12:37

Instrument: TOC-LCSH

Analyzed: 11-May-2018 23:22

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	19.57	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-15-180502
18E0080-29RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 12:37

Instrument: FID6

Analyzed: 11-May-2018 11:40

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	11300	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	110	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-15-180502
18E0080-29RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 12:37

Instrument: DX500

Analyzed: 10-May-2018 22:16

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.108	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-15-180502
18E0080-30 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 12:37

Instrument: ICPMS2

Analyzed: 11-May-2018 19:52

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	43.8	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-17-180502
18E0080-31 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 13:01

Instrument: NT3

Analyzed: 07-May-2018 20:11

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.59	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	101	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	97.5	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-17-180502
18E0080-31 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 13:01

Instrument: FID6

Analyzed: 10-May-2018 13:35

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	11900	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	103	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-17-180502
18E0080-31 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 13:01

Instrument: ICPMS2

Analyzed: 14-May-2018 22:41

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	32.4	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-17-180502
18E0080-31 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 13:01

Instrument: TOC-LCSH

Analyzed: 11-May-2018 23:43

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0233
Prepared: 08-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	14.86	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-17-180502
18E0080-31RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 13:01

Instrument: FID6

Analyzed: 11-May-2018 13:30

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	10000	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	110	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-17-180502
18E0080-31RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 13:01

Instrument: DX500

Analyzed: 10-May-2018 23:40

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-17-180502
18E0080-32 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 13:01

Instrument: ICPMS2

Analyzed: 11-May-2018 19:57

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	32.2	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-20-180502
18E0080-33 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 13:37

Instrument: NT3

Analyzed: 07-May-2018 20:37

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	1.04	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.2	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.7	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	95.4	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-20-180502
18E0080-33 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 13:37

Instrument: FID6

Analyzed: 10-May-2018 13:49

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	3900	ug/L	
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			<i>72-122 %</i>	<i>101</i>	<i>%</i>	



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-20-180502
18E0080-33 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 13:37

Instrument: ICPMS2

Analyzed: 14-May-2018 22:46

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	27.8	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-20-180502

18E0080-33 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 13:37

Instrument: TOC-LCSH

Analyzed: 12-May-2018 00:03

Sample Preparation:

Preparation Method: No Prep Wet Chem

Preparation Batch: BGE0233

Prepared: 08-May-2018

Sample Size: 20 mL

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	12.18	mg/L	



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-20-180502
18E0080-33RE2 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/02/2018 13:37

Instrument: DX500 Analyzed: 10-May-2018 23:57

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179 Sample Size: 5 mL
Prepared: 07-May-2018 Final Volume: 5 mL

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



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-20-180502
18E0080-34 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 13:37

Instrument: ICPMS2

Analyzed: 11-May-2018 20:02

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	27.8	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	0.358	ug/L	J



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-23-180502
18E0080-35 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 13:46

Instrument: NT3

Analyzed: 07-May-2018 21:02

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0186 Sample Size: 10 mL
Prepared: 07-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.31	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	94.5	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-23-180502
18E0080-35 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 13:46

Instrument: ICPMS2

Analyzed: 14-May-2018 23:08

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	25.5	ug/L	
Copper	7440-50-8	1	0.340	0.500	0.651	ug/L	



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BDC-05-23-180502
18E0080-35 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/02/2018 13:46

Instrument: DX500 Analyzed: 08-May-2018 04:20

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179 Sample Size: 5 mL
Prepared: 07-May-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	100	10.0	10.0	11.4	mg/L	D



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BDC-05-23-180502
18E0080-35 (Water)

Wet Chemistry

Method: SM 5310 B-00 Sampled: 05/02/2018 13:46

Instrument: TOC-LCSH Analyzed: 12-May-2018 03:20

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0261 Sample Size: 20 mL
Prepared: 09-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	5.60	mg/L	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-23-180502
18E0080-36 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 13:46

Instrument: ICPMS2

Analyzed: 11-May-2018 20:07

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	26.3	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-22-180502

18E0080-37 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 14:17

Instrument: NT3

Analyzed: 08-May-2018 16:34

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0216 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	1.02	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	10.6	ug/L	
Trichloroethene	79-01-6	1	0.20	0.55	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	95.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	106	%	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-22-180502
18E0080-37 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 14:17

Instrument: ICPMS2

Analyzed: 14-May-2018 23:13

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	33.0	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-22-180502
18E0080-37 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 14:17

Instrument: DX500

Analyzed: 08-May-2018 04:37

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	100	10.0	10.0	10.9	mg/L	D



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-22-180502

18E0080-37 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 14:17

Instrument: TOC-LCSH

Analyzed: 12-May-2018 03:40

Sample Preparation:

Preparation Method: No Prep Wet Chem

Preparation Batch: BGE0261

Prepared: 09-May-2018

Sample Size: 20 mL

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	5.66	mg/L	



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Seattle WA, 98124

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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-22-180502
18E0080-38 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 14:17

Instrument: ICPMS2

Analyzed: 11-May-2018 20:28

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	31.8	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502
18E0080-39 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 14:31

Instrument: NT3

Analyzed: 08-May-2018 17:00

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0216 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.83	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.43	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	99.5	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.2	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502
18E0080-39 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 14:31

Instrument: FID6

Analyzed: 10-May-2018 14:03

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	13400	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			<i>72-122 %</i>	<i>102</i>	<i>%</i>	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502
18E0080-39 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 14:31

Instrument: ICPMS2

Analyzed: 14-May-2018 23:18

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0243 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	8.02	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502
18E0080-39 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 14:31

Instrument: TOC-LCSH

Analyzed: 12-May-2018 03:59

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0261
Prepared: 09-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	4.95	mg/L	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502
18E0080-39RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 14:31

Instrument: FID6

Analyzed: 11-May-2018 12:07

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	9110	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	112	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502
18E0080-39RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 14:31

Instrument: DX500

Analyzed: 10-May-2018 02:23

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	7.32	mg/L	D



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-21-180502
18E0080-40 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 14:31

Instrument: ICPMS2

Analyzed: 11-May-2018 20:33

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0245 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	8.42	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-14-180502
18E0080-41 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 15:07

Instrument: NT3

Analyzed: 08-May-2018 17:26

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0216 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.33	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	107	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.8	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	93.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	107	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-14-180502
18E0080-41 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 15:07

Instrument: FID6

Analyzed: 10-May-2018 14:17

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	16500	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	99.2	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-14-180502
18E0080-41 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 15:07

Instrument: ICPMS2

Analyzed: 10-May-2018 17:54

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0244 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	25.3	ug/L	
Copper	7440-50-8	1	0.340	0.500	ND	ug/L	U



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-14-180502
18E0080-41 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/02/2018 15:07

Instrument: DX500 Analyzed: 08-May-2018 05:10

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179 Sample Size: 5 mL
Prepared: 07-May-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	100	10.0	10.0	10.4	mg/L	D



The Boeing Company [Developmental Center] PO Box 3703 MS 2R-96 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Jennifer Parsons	Reported: 22-May-2018 15:37
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BDC-05-14-180502
18E0080-41 (Water)

Wet Chemistry

Method: SM 5310 B-00 Sampled: 05/02/2018 15:07

Instrument: TOC-LCSH Analyzed: 12-May-2018 04:19

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0261 Sample Size: 20 mL
Prepared: 09-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	20.57	mg/L	



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Seattle WA, 98124

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Reported:
22-May-2018 15:37

BDC-05-14-180502
18E0080-41RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 15:07

Instrument: FID6

Analyzed: 11-May-2018 14:59

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	10100	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	112	%	



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-14-180502
18E0080-42 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 15:07

Instrument: ICPMS2

Analyzed: 10-May-2018 20:47

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0246 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	24.5	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-18-180502
18E0080-43 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 15:11

Instrument: NT3

Analyzed: 08-May-2018 17:53

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0216 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	3.42	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	6.74	ug/L	
Trichloroethene	79-01-6	1	0.20	0.31	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	101	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.4	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-18-180502
18E0080-43 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 15:11

Instrument: FID6

Analyzed: 10-May-2018 14:31

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	16300	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	94.0	%	



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Reported:
22-May-2018 15:37

BDC-05-18-180502
18E0080-43 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 15:11

Instrument: ICPMS2

Analyzed: 10-May-2018 17:44

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0244 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	4.98	ug/L	
Copper	7440-50-8	1	0.340	0.500	1.75	ug/L	



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PO Box 3703 MS 2R-96
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-18-180502
18E0080-43 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 15:11

Instrument: TOC-LCSH

Analyzed: 12-May-2018 04:39

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0261 Sample Size: 20 mL
Prepared: 09-May-2018 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	27.88	mg/L	



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Seattle WA, 98124

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Reported:
22-May-2018 15:37

BDC-05-18-180502
18E0080-43RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 15:11

Instrument: FID6

Analyzed: 11-May-2018 12:35

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	15600	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	104	%	



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PO Box 3703 MS 2R-96
Seattle WA, 98124

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Reported:
22-May-2018 15:37

BDC-05-18-180502
18E0080-43RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 15:11

Instrument: DX500

Analyzed: 10-May-2018 02:39

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	0.823	mg/L	D



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Reported:
22-May-2018 15:37

BDC-05-18-180502
18E0080-44 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 15:11

Instrument: ICPMS2

Analyzed: 10-May-2018 20:29

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0246 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	4.51	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

BDC-05-13-180502
18E0080-45 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 15:47

Instrument: NT3

Analyzed: 08-May-2018 18:19

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0216 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.60	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	107	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	101	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.3	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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Reported:
22-May-2018 15:37

BDC-05-13-180502
18E0080-45 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 15:47

Instrument: FID6

Analyzed: 10-May-2018 15:56

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0287 Sample Size: 10 mL
Prepared: 10-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	0.65	12100	ug/L	E
Ethane	74-84-0	1	1.23	ND	ug/L	U
Ethene	74-85-1	1	1.14	ND	ug/L	U
Acetylene	74-86-2	1	1.06	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	87.6	%	



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PO Box 3703 MS 2R-96
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-13-180502
18E0080-45 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 15:47

Instrument: ICPMS2

Analyzed: 10-May-2018 20:33

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0244 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	28.7	ug/L	
Copper	7440-50-8	1	0.340	0.500	0.476	ug/L	J



The Boeing Company [Developmental Center]
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Seattle WA, 98124

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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

BDC-05-13-180502
18E0080-45 (Water)

Wet Chemistry

Method: SM 5310 B-00

Sampled: 05/02/2018 15:47

Instrument: TOC-LCSH

Analyzed: 12-May-2018 04:59

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0261
Prepared: 09-May-2018

Sample Size: 20 mL
Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	21.48	mg/L	



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Reported:
22-May-2018 15:37

BDC-05-13-180502
18E0080-45RE1 (Water)

Dissolved Gases

Method: EPA RSK-175

Sampled: 05/02/2018 15:47

Instrument: FID6

Analyzed: 11-May-2018 12:49

Sample Preparation: Preparation Method: No Prep - Volatiles
Preparation Batch: BGE0452 Sample Size: 1 mL
Prepared: 11-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Methane	74-82-8	1	6.54	16000	ug/L	
Ethane	74-84-0	1	12.3	ND	ug/L	U
Ethene	74-85-1	1	11.4	ND	ug/L	U
Acetylene	74-86-2	1	10.6	ND	ug/L	U
<i>Surrogate: Propane</i>			72-122 %	105	%	



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Reported:
22-May-2018 15:37

BDC-05-13-180502
18E0080-45RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/02/2018 15:47

Instrument: DX500

Analyzed: 11-May-2018 00:14

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0179
Prepared: 07-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	1	0.100	0.100	0.112	mg/L	



The Boeing Company [Developmental Center]
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Reported:
22-May-2018 15:37

BDC-05-13-180502
18E0080-46 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8 UCT-KED

Sampled: 05/02/2018 15:47

Instrument: ICPMS2

Analyzed: 10-May-2018 20:38

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Preparation Batch: BGE0246 Sample Size: 25 mL
Prepared: 09-May-2018 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	26.1	ug/L	
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U



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Reported:
22-May-2018 15:37

Tripblanks
18E0080-47 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/02/2018 07:00

Instrument: NT3

Analyzed: 08-May-2018 13:31

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0216 Sample Size: 10 mL
Prepared: 08-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.7	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	91.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Volatile Organic Compounds - Quality Control

Batch BGE0186 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0186-BLK1)										
					Prepared: 07-May-2018 Analyzed: 07-May-2018 13:06					
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.10		ug/L	5.00		102	80-129			
Surrogate: Toluene-d8	4.95		ug/L	5.00		98.9	80-120			
Surrogate: 4-Bromofluorobenzene	4.80		ug/L	5.00		96.0	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.32		ug/L	5.00		106	80-120			
LCS (BGE0186-BS1)										
					Prepared: 07-May-2018 Analyzed: 07-May-2018 10:03					
Vinyl Chloride	8.01	0.20	ug/L	10.0		80.1	66-133			
cis-1,2-Dichloroethene	8.79	0.20	ug/L	10.0		87.9	80-121			
Trichloroethene	8.61	0.20	ug/L	10.0		86.1	80-120			
Tetrachloroethene	9.16	0.20	ug/L	10.0		91.6	80-120			
Surrogate: 1,2-Dichloroethane-d4	4.57		ug/L	5.00		91.5	80-129			
Surrogate: Toluene-d8	4.97		ug/L	5.00		99.3	80-120			
Surrogate: 4-Bromofluorobenzene	5.02		ug/L	5.00		100	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.92		ug/L	5.00		98.3	80-120			
LCS Dup (BGE0186-BSD1)										
					Prepared: 07-May-2018 Analyzed: 07-May-2018 10:29					
Vinyl Chloride	8.49	0.20	ug/L	10.0		84.9	66-133	5.86	30	
cis-1,2-Dichloroethene	9.15	0.20	ug/L	10.0		91.5	80-121	4.06	30	
Trichloroethene	8.89	0.20	ug/L	10.0		88.9	80-120	3.21	30	
Tetrachloroethene	9.44	0.20	ug/L	10.0		94.4	80-120	3.07	30	
Surrogate: 1,2-Dichloroethane-d4	4.57		ug/L	5.00		91.4	80-129			
Surrogate: Toluene-d8	4.98		ug/L	5.00		99.7	80-120			
Surrogate: 4-Bromofluorobenzene	5.14		ug/L	5.00		103	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.04		ug/L	5.00		101	80-120			



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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

Volatile Organic Compounds - Quality Control

Batch BGE0216 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0216-BLK1)										
					Prepared: 08-May-2018 Analyzed: 08-May-2018 12:13					
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.26		ug/L	5.00		105	80-129			
Surrogate: Toluene-d8	4.90		ug/L	5.00		97.9	80-120			
Surrogate: 4-Bromofluorobenzene	4.74		ug/L	5.00		94.7	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.21		ug/L	5.00		104	80-120			
LCS (BGE0216-BS1)										
					Prepared: 08-May-2018 Analyzed: 08-May-2018 10:03					
Vinyl Chloride	8.87	0.20	ug/L	10.0		88.7	66-133			
cis-1,2-Dichloroethene	9.32	0.20	ug/L	10.0		93.2	80-121			
Trichloroethene	9.02	0.20	ug/L	10.0		90.2	80-120			
Tetrachloroethene	9.22	0.20	ug/L	10.0		92.2	80-120			
Surrogate: 1,2-Dichloroethane-d4	4.87		ug/L	5.00		97.3	80-129			
Surrogate: Toluene-d8	5.13		ug/L	5.00		103	80-120			
Surrogate: 4-Bromofluorobenzene	4.97		ug/L	5.00		99.4	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.88		ug/L	5.00		97.6	80-120			
LCS Dup (BGE0216-BSD1)										
					Prepared: 08-May-2018 Analyzed: 08-May-2018 10:29					
Vinyl Chloride	9.53	0.20	ug/L	10.0		95.3	66-133	7.18	30	
cis-1,2-Dichloroethene	9.97	0.20	ug/L	10.0		99.7	80-121	6.75	30	
Trichloroethene	9.57	0.20	ug/L	10.0		95.7	80-120	5.90	30	
Tetrachloroethene	9.90	0.20	ug/L	10.0		99.0	80-120	7.14	30	
Surrogate: 1,2-Dichloroethane-d4	4.84		ug/L	5.00		96.8	80-129			
Surrogate: Toluene-d8	5.12		ug/L	5.00		102	80-120			
Surrogate: 4-Bromofluorobenzene	5.09		ug/L	5.00		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.99		ug/L	5.00		99.8	80-120			



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PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Dissolved Gases - Quality Control

Batch BGE0224 - No Prep - Volatiles

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0224-BLK1)		Prepared: 08-May-2018 Analyzed: 09-May-2018 09:35								
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1900		ug/L	1800		105	72-122			
LCS (BGE0224-BS1)		Prepared: 08-May-2018 Analyzed: 09-May-2018 09:07								
Methane	701		ug/L	656		107	80-120			
Ethane	1200		ug/L	1230		97.4	80-120			
Ethene	1160		ug/L	1150		101	80-120			
Acetylene	1150		ug/L	1060		109	73-123			E
Surrogate: Propane	2000		ug/L	1800		111	62-122			
LCS Dup (BGE0224-BSD1)		Prepared: 08-May-2018 Analyzed: 09-May-2018 09:21								
Methane	754		ug/L	656		115	80-120	7.31	30	
Ethane	1260		ug/L	1230		103	80-120	5.09	30	
Ethene	1230		ug/L	1150		107	80-120	5.84	30	
Acetylene	1250		ug/L	1060		118	73-123	8.37	30	E
Surrogate: Propane	1980		ug/L	1800		110	62-122			



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Seattle WA, 98124

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Reported:
22-May-2018 15:37

Dissolved Gases - Quality Control

Batch BGE0287 - No Prep - Volatiles

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0287-BLK1)		Prepared: 10-May-2018 Analyzed: 10-May-2018 12:03								
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1950		ug/L	1800		108	72-122			
LCS (BGE0287-BS1)		Prepared: 10-May-2018 Analyzed: 10-May-2018 09:58								
Methane	759		ug/L	656		116	80-120			
Ethane	1270		ug/L	1230		103	80-120			
Ethene	1240		ug/L	1150		107	80-120			
Acetylene	1300		ug/L	1060		123	73-123			E
Surrogate: Propane	1990		ug/L	1800		110	62-122			
LCS Dup (BGE0287-BSD1)		Prepared: 10-May-2018 Analyzed: 10-May-2018 10:27								
Methane	763		ug/L	656		116	80-120	0.53	30	
Ethane	1270		ug/L	1230		103	80-120	0.02	30	
Ethene	1260		ug/L	1150		109	80-120	1.69	30	
Acetylene	1440		ug/L	1060		136	73-123	10.40	30	*, E
Surrogate: Propane	1970		ug/L	1800		109	62-122			



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

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Dissolved Gases - Quality Control

Batch BGE0288 - No Prep - Volatiles

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0288-BLK1)		Prepared: 10-May-2018 Analyzed: 15-May-2018 10:01								
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	1970		ug/L	1800		109	72-122			
LCS (BGE0288-BS1)		Prepared: 10-May-2018 Analyzed: 15-May-2018 09:33								
Methane	754		ug/L	656		115	80-120			
Ethane	1270		ug/L	1230		103	80-120			
Ethene	1220		ug/L	1150		106	80-120			
Acetylene	1160		ug/L	1060		110	73-123			E
Surrogate: Propane	1980		ug/L	1800		110	62-122			
LCS Dup (BGE0288-BS1)		Prepared: 10-May-2018 Analyzed: 15-May-2018 09:47								
Methane	743		ug/L	656		113	80-120	1.57	30	
Ethane	1260		ug/L	1230		102	80-120	0.97	30	
Ethene	1220		ug/L	1150		106	80-120	0.25	30	
Acetylene	1180		ug/L	1060		112	73-123	1.72	30	E
Surrogate: Propane	1970		ug/L	1800		109	62-122			



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

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Reported:
22-May-2018 15:37

Dissolved Gases - Quality Control

Batch BGE0452 - No Prep - Volatiles

Instrument: FID6 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0452-BLK1)		Prepared: 11-May-2018 Analyzed: 11-May-2018 09:55								
Methane	ND	0.65	ug/L							U
Ethane	ND	1.23	ug/L							U
Ethene	ND	1.14	ug/L							U
Acetylene	ND	1.06	ug/L							U
Surrogate: Propane	2000		ug/L	1800		111	72-122			
LCS (BGE0452-BS1)		Prepared: 11-May-2018 Analyzed: 11-May-2018 09:23								
Methane	749		ug/L	656		114	80-120			
Ethane	1240		ug/L	1230		101	80-120			
Ethene	1220		ug/L	1150		106	80-120			
Acetylene	1280		ug/L	1060		121	73-123			E
Surrogate: Propane	2110		ug/L	1800		117	62-122			
LCS Dup (BGE0452-BSD1)		Prepared: 11-May-2018 Analyzed: 11-May-2018 10:13								
Methane	757		ug/L	656		115	80-120	1.08	30	
Ethane	1270		ug/L	1230		103	80-120	2.07	30	
Ethene	1230		ug/L	1150		107	80-120	0.51	30	
Acetylene	1220		ug/L	1060		115	73-123	4.98	30	E
Surrogate: Propane	2090		ug/L	1800		116	62-122			



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

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Metals and Metallic Compounds - Quality Control

Batch BGE0243 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0243-BLK1)						Prepared: 09-May-2018 Analyzed: 14-May-2018 19:34						
Arsenic	75a	ND	0.0220	0.200	ug/L							U
Copper	63	ND	0.340	0.500	ug/L							U
Copper	65	ND	0.350	0.500	ug/L							U
LCS (BGE0243-BS1)						Prepared: 09-May-2018 Analyzed: 14-May-2018 20:15						
Arsenic	75a	25.1	0.0220	0.200	ug/L	25.0		101	80-120			
Copper	63	26.3	0.340	0.500	ug/L	25.0		105	80-120			
Copper	65	26.4	0.350	0.500	ug/L	25.0		106	80-120			
Duplicate (BGE0243-DUP1)						Source: 18E0080-01 Prepared: 09-May-2018 Analyzed: 14-May-2018 21:40						
Arsenic	75a	7.02	0.0220	0.200	ug/L		6.84			2.58	20	
Copper	63	ND	0.340	0.500	ug/L		ND					U
Matrix Spike (BGE0243-MS1)						Source: 18E0080-01 Prepared: 09-May-2018 Analyzed: 14-May-2018 21:50						
Arsenic	75a	32.3	0.0220	0.200	ug/L	25.0	6.84	102	75-125			
Copper	63	25.7	0.340	0.500	ug/L	25.0	ND	103	75-125			

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



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Metals and Metallic Compounds - Quality Control

Batch BGE0244 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0244-BLK1)						Prepared: 09-May-2018 Analyzed: 10-May-2018 16:33						
Arsenic	75a	ND	0.0220	0.200	ug/L							U
Copper	63	ND	0.340	0.500	ug/L							U
Copper	65	ND	0.350	0.500	ug/L							U
LCS (BGE0244-BS1)						Prepared: 09-May-2018 Analyzed: 10-May-2018 18:03						
Arsenic	75a	25.2	0.0220	0.200	ug/L	25.0		101	80-120			
Copper	63	27.3	0.340	0.500	ug/L	25.0		109	80-120			
Copper	65	27.4	0.350	0.500	ug/L	25.0		110	80-120			
Duplicate (BGE0244-DUP1)						Source: 18E0080-41 Prepared: 09-May-2018 Analyzed: 10-May-2018 17:50						
Arsenic	75a	25.8	0.0220	0.200	ug/L		25.3			2.06	20	
Copper	63	ND	0.340	0.500	ug/L		ND					U
Matrix Spike (BGE0244-MS1)						Source: 18E0080-41 Prepared: 09-May-2018 Analyzed: 10-May-2018 17:59						
Arsenic	75a	51.6	0.0220	0.200	ug/L	25.0	25.3	105	75-125			
Copper	63	26.0	0.340	0.500	ug/L	25.0	ND	104	75-125			

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PO Box 3703 MS 2R-96
Seattle WA, 98124

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Reported:
22-May-2018 15:37

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BGE0245 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0245-BLK1)						Prepared: 09-May-2018 Analyzed: 14-May-2018 17:41						
Arsenic, Dissolved	75a	ND	0.0220	0.200	ug/L							U
Copper, Dissolved	63	ND	0.340	0.500	ug/L							U
Copper, Dissolved	65	ND	0.350	0.500	ug/L							U
LCS (BGE0245-BS1)						Prepared: 09-May-2018 Analyzed: 14-May-2018 18:17						
Arsenic, Dissolved	75a	25.4	0.0220	0.200	ug/L	25.0		101	80-120			
Copper, Dissolved	63	27.3	0.340	0.500	ug/L	25.0		109	80-120			
Copper, Dissolved	65	27.9	0.350	0.500	ug/L	25.0		112	80-120			
Duplicate (BGE0245-DUP1)						Source: 18E0080-02 Prepared: 09-May-2018 Analyzed: 11-May-2018 18:55						
Arsenic, Dissolved	75a	9.20	0.0220	0.200	ug/L		8.64			6.22	20	
Copper, Dissolved	63	ND	0.340	0.500	ug/L		ND					U
Matrix Spike (BGE0245-MS1)						Source: 18E0080-02 Prepared: 09-May-2018 Analyzed: 11-May-2018 19:05						
Arsenic, Dissolved	75a	33.7	0.0220	0.200	ug/L	25.0	8.64	100	75-125			
Copper, Dissolved	63	24.9	0.340	0.500	ug/L	25.0	ND	99.4	75-125			

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



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

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BGE0246 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0246-BLK1)						Prepared: 09-May-2018 Analyzed: 10-May-2018 19:18						
Arsenic, Dissolved	75a	ND	0.0220	0.200	ug/L							U
Copper, Dissolved	63	ND	0.340	0.500	ug/L							U
Copper, Dissolved	65	ND	0.350	0.500	ug/L							U
LCS (BGE0246-BS1)						Prepared: 09-May-2018 Analyzed: 10-May-2018 19:58						
Arsenic, Dissolved	75a	25.6	0.0220	0.200	ug/L	25.0		103	80-120			
Copper, Dissolved	63	27.3	0.340	0.500	ug/L	25.0		109	80-120			
Copper, Dissolved	65	27.2	0.350	0.500	ug/L	25.0		109	80-120			
Duplicate (BGE0246-DUP1)						Source: 18E0080-42 Prepared: 09-May-2018 Analyzed: 10-May-2018 20:42						
Arsenic, Dissolved	75a	24.1	0.0220	0.200	ug/L		24.5			1.85	20	
Copper, Dissolved	63	ND	0.340	0.500	ug/L		ND					U
Matrix Spike (BGE0246-MS1)						Source: 18E0080-42 Prepared: 09-May-2018 Analyzed: 10-May-2018 20:51						
Arsenic, Dissolved	75a	48.5	0.0220	0.200	ug/L	25.0	24.5	95.9	75-125			
Copper, Dissolved	63	25.1	0.340	0.500	ug/L	25.0	ND	100	75-125			

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



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Reported:
22-May-2018 15:37

Wet Chemistry - Quality Control

Batch BGE0178 - No Prep Wet Chem

Instrument: DX500 Analyst: SK

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0178-BLK1)						Prepared: 07-May-2018 Analyzed: 07-May-2018 17:42					
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BGE0178-BS1)						Prepared: 07-May-2018 Analyzed: 07-May-2018 17:59					
Sulfate	1.47	0.100	0.100	mg/L	1.50		97.8	90-110			



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Reported:
22-May-2018 15:37

Wet Chemistry - Quality Control

Batch BGE0179 - No Prep Wet Chem

Instrument: DX500 Analyst: SK

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0179-BLK1)						Prepared: 07-May-2018 Analyzed: 08-May-2018 01:49					
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BGE0179-BS1)						Prepared: 07-May-2018 Analyzed: 08-May-2018 02:06					
Sulfate	1.48	0.100	0.100	mg/L	1.50		98.9	90-110			
Duplicate (BGE0179-DUP3)						Source: 18E0080-29RE2 Prepared: 07-May-2018 Analyzed: 10-May-2018 22:33					
Sulfate	0.102	0.100	0.100	mg/L		0.108			5.71	20	
Matrix Spike (BGE0179-MS3)						Source: 18E0080-29RE2 Prepared: 07-May-2018 Analyzed: 10-May-2018 23:23					
Sulfate	2.12	0.100	0.100	mg/L	2.00	0.108	100	75-125			

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PO Box 3703 MS 2R-96
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Reported:
22-May-2018 15:37

Wet Chemistry - Quality Control

Batch BGE0233 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: KK

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0233-BLK1)						Prepared: 08-May-2018 Analyzed: 09-May-2018 07:17					
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BGE0233-BS1)						Prepared: 08-May-2018 Analyzed: 09-May-2018 07:39					
Total Organic Carbon	21.18	0.50	0.50	mg/L	20.00		106	90-110			
Duplicate (BGE0233-DUP1)						Source: 18E0080-01 Prepared: 08-May-2018 Analyzed: 09-May-2018 09:04					
Total Organic Carbon	18.18	0.50	0.50	mg/L		18.23			0.28	20	
Matrix Spike (BGE0233-MS1)						Source: 18E0080-01 Prepared: 08-May-2018 Analyzed: 09-May-2018 09:25					
Total Organic Carbon	40.77	0.50	0.50	mg/L	20.01	18.23	113	75-125			

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



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PO Box 3703 MS 2R-96
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Reported:
22-May-2018 15:37

Wet Chemistry - Quality Control

Batch BGE0261 - No Prep Wet Chem

Instrument: TOC-LCSH Analyst: CDE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0261-BLK1)						Prepared: 09-May-2018 Analyzed: 12-May-2018 02:35					
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BGE0261-BS1)						Prepared: 09-May-2018 Analyzed: 12-May-2018 03:01					
Total Organic Carbon	20.78	0.50	0.50	mg/L	20.00		104	90-110			



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-63	NELAP,WADOE,WA-DW,DoD-ELAP
Copper-65	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 300.0 in Water	
Sulfate	DoD-ELAP,WADOE,WA-DW,NELAP
EPA 8260C in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE



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Reported:
22-May-2018 15:37

Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE



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

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Jennifer Parsons

Reported:
22-May-2018 15:37

1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA RSK-175 in Water

Methane	NELAP
Ethane	NELAP
Ethene	NELAP
Acetylene	NELAP

SM 5310 B-00 in Water

Total Organic Carbon	WA-DW,WADOE,NELAP
----------------------	-------------------

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/07/2019
CALAP	California Department of Public Health CAELAP	2748	06/30/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-011	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018



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Project: Boeing Regional GW Developmental Center
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Reported:
22-May-2018 15:37

Notes and Definitions

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

AOC-5

(Groundwater Sample Collection Forms and Analytical Data)

Groundwater Low-Flow Sample Collection Form

Project Name: Regional GW Monitoring - Dev. Center Project Number: 0025217.099.039
 Event: February Quarterly Date/Time: 2/ 5 /2018 @ 1006
 Sample Number: BDC-101- 180205 Weather: 40'S, DRIZZLING
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: _____
 DTW Before Purging (ft) 10.66 Time: 937 Flow through cell vol. _____ GW Meter No.(s) HERON 2
 Begin Purge: Date/Time: 2/ 5 /18 @ 939 End Purge: Date/Time: 2/ 5 /18 @ 953 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
942	13.6	387.1	5.69	6.61	39.1	LOW	10.69	<0.25	
945	13.4	348.8	5.80	6.65	52.5			0.25	
948	13.5	351.8	5.97	6.65	55.5		10.71		
951	13.6	352.8	5.91	6.64	58.3			0.5	

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED Bladder
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLOUDY, LIGHT YELLOWISH TINT, NO/NS

Replicate	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	13.6	353.2	5.89	6.64	58.9				
2	13.6	353.8	5.92	6.64	58.9				
3	13.6	354.0	5.90	6.64	59.3				
4	13.6	354.5	5.90	6.64	59.6				
Average:	13.6	353.9	5.90	6.64	59.2	#DIV/0!	#DIV/0!	#DIV/0!	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)							
5	VOC's (8260C) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/> (8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>							
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F) (COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2) (Total Cyanide) (WAD Cyanide) (Free Cyanide) (Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) VOC (Boeing (38) short list) others							

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 2/5/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Regional GW Monitoring - Dev. Center Project Number: 0025217.099.039
 Event: February Quarterly Date/Time: 2/ 5 /2018 @ 936
 Sample Number: BDC-102- 180205 Weather: 40'S, DRIZZLING
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: _____
 DTW Before Purging (ft) 10.53 Time: 910 Flow through cell vol. _____ GW Meter No.(s) HERON 2
 Begin Purge: Date/Time: 2/ 5 /18 @ 913 End Purge: Date/Time: 2/ 5 /18 @ 926 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
916	12.8	492.6	1.18	6.36	-50.4		10.53	<0.25	
919	12.9	485.8	0.95	6.42	-67.0			0.25	
922	12.9	486.1	0.92	6.43	-80.4			<0.50	
925	13.1	486.8	0.88	6.48	-93.6		10.53		

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED Bladder
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): SLIGHTY TURID, LIGHT BROWNISH/ORNGE COLOR, NO/NS

Replicate	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	13.1	487.7	0.83	6.49	-98.0				
2	13.1	488.6	0.83	6.49	-96.5				
3	13.1	489.3	0.82	6.50	-97.1				
4	13.1	189.7	0.81	6.50	-98.1				
Average:	13.1	413.8	0.82	6.50	-97.4	#DIV/0!	#DIV/0!	#DIV/0!	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	VOC's (8260C) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	VOC (Boeing (38) short list)
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 2/5/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Regional GW Monitoring - Dev. Center Project Number: 0025217.099.039
 Event: February Quarterly Date/Time: 2/ 5 /2018 @ 816
 Sample Number: BDC-103- 180205 Weather: 40'S, DRIZZLING
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: _____
 DTW Before Purging (ft) 10.38 Time: 750 Flow through cell vol. _____ GW Meter No.(s) HERON 2
 Begin Purge: Date/Time: 2/ 5 /18 @ 753 End Purge: Date/Time: 2/ 5 /18 @ 813 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
756	11.0	942.0	2.02	6.05	140.1	LOW		<0.25	
759	11.0	938.0	1.58	6.02	141.1				
802	10.6	934.0	1.51	5.98	142.2		10.43	0.25	
805	10.8	929.0	1.38	5.95	143.9			<0.5	
808	10.8	930.0	1.30	5.93	144.4		10.45		
811	10.7	927.0	1.31	5.93	144.2				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type Peristaltic
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): clear with suspended particles, colorless, no/ns

Replicate	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	10.7	926.0	1.30	5.93	144.1				
2	10.6	926.0	1.32	5.93	144.1				
3	10.6	925.0	1.33	5.93	144.0				
4	10.6	924.0	1.12	5.93	143.9				
Average:	10.6	925.3	1.27	5.93	144.0	#DIV/0!	#DIV/0!	#DIV/0!	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	VOC's (8260C) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	VOC (Boeing (38) short list)
	others

Duplicate Sample No(s): duplicate location (DUPI)
 Comments: _____
 Signature: JHA Date: 2/5/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Regional GW Monitoring - Dev. Center Project Number: 0025217.099.039
 Event: February Quarterly Date/Time: 2/ 5 /2018 @ 800
 Sample Number: BDC-DUP1180205 Weather: 40'S, DRIZZLING
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: _____
 DTW Before Purging (ft) _____ Time: _____ Flow through cell vol. _____ GW Meter No.(s) HERON 2
 Begin Purge: Date/Time: 2/ 5 /18 @ End Purge: Date/Time: 2/ 5 /18 @ Gallons Purged: _____
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	

DUPLICATE TO BDC-103

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type Peristaltic
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): _____

Replicate	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	10.7	926.0	1.32	5.93	144.1				
2	10.6	925.0	1.32	5.93	144.0				
3	10.6	924.0	1.11	5.93	144.0				
4	10.6	924.0	1.12	5.93	143.9				
Average:	10.6	924.8	1.22	5.93	144.0	#DIV/0!	#DIV/0!	#DIV/0!	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)								
5	VOC's (8260C) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/> (8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>								
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F) (COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2) (Total Cyanide) (WAD Cyanide) (Free Cyanide) (Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) VOC (Boeing (38) short list)								
	others								

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 2/5/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Regional GW Monitoring - Dev. Center Project Number: 0025217.099.039
 Event: February Quarterly Date/Time: 2/ 5 /2018 @ 856
 Sample Number: BDC-104- 180205 Weather: 40'S, DRIZZLING
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES or NO) Damaged (YES or NO) Describe: _____
 DTW Before Purging (ft) 10.19 Time: 829 Flow through cell vol. _____ GW Meter No.(s) HERON 2
 Begin Purge: Date/Time: 2/ 5 /18 @ 834 End Purge: Date/Time: 2/ 5 /18 @ 855 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other

Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits +/- 3% +/- 3% +/- 10% +/- 0.1 units +/- 10 mV +/- 10% < 0.3 ft >= 1 flow through cell									
837	9.8	57.7	5.99	6.86	59.3	LOW		<0.25	
840	9.7	50.7	6.67	6.65	65.1		10.21		
843	9.7	46.5	6.80	6.42	75.2				
846	9.7	45.4	6.85	6.36	79.3			0.25	
849	9.7	44.9	6.88	6.30	84.1		10.21		
852	9.7	44.6	6.96	6.21	87.9				
854	9.7	44.7	6.97	6.17	90.2				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type Peristaltic
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	9.7	44.6	6.95	6.18	90.4				
2	9.7	44.6	6.93	6.18	90.5				
3	9.7	44.6	6.92	6.17	90.6				
4	9.7	44.5	6.93	6.17	90.7				
Average:	9.7	44.6	6.93	6.18	90.6	#DIV/0!	#DIV/0!	#DIV/0!	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	VOC's (8260C) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness)
	VOC (Boeing (38) short list)
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 2/5/2018



Analytical Resources, Incorporated
Analytical Chemists and Consultants

15 February 2018

Carl Bach
The Boeing Company [Developmental Center]
P.O. Box 3707 MC 9U4-26
Seattle, WA 98124

RE: Boeing Regional GW Developmental Center

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

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

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

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
18B0048	N/A

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

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

Analytical Resources, Inc.

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



18B0048



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

Chain-of-Custody Record

Date 2/5/18
 Page 1 of 1

Project Name DC Regional 600 Project No. 002527.094-039

Project Location/Event Tukwila / February 2018

Sampler's Name Jeanani Huerta

Project Contact Chris Himmel & Jen Parsons

Send Results To Chris Himmel & Parsons

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters	Observations/Comments
BDC-Dup1-180205	2/5/18	800	AA	6	BTEX (6260c) X X X X X X TPH-6 (Low TPH) X X X X X X Sulfate (300c) X X X X X X Nitrate/Nitrite (300c) X X X X X X	X Allow water samples to settle, collect aliquot from clear portion NWTPH-Dx - run acid wash silica gel cleanup
BDC-103-180205	2/5/18	816	AA	6		Analyze for EPH if no specific product identified
BDC-104-180205	2/5/18	856	AA	6		VOC/BTEX/VPH (soil): — non-preserved — preserved w/methanol — preserved w/sodium bisulfate — Freeze upon receipt — Dissolved metal water samples field filtered Other _____
BDC-102-180205	2/5/18	936	AA	6		
BDC-101-180205	2/5/18	1006	AA	6		
Trip blank's	—	—	AA	4		

Special Shipment/Handling or Storage Requirements ON ICE Method of Shipment Deliver

Relinquished by Signature <u>[Signature]</u> Printed Name <u>Brandon Fish</u> Company <u>ARI</u> Date <u>2/5/18</u> Time <u>10:21</u>	Received by Signature <u>[Signature]</u> Printed Name <u>Jeanani Huerta</u> Company <u>Landau Associates</u> Date <u>2/5/18</u> Time <u>10:21</u>
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WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative 12/2014



The Boeing Company [Developmental Center]
P.O. Box 3707 MC 9U4-26
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-Dup1-180205	18B0048-01	Water	05-Feb-2018 08:00	05-Feb-2018 10:21
BDC-103-180205	18B0048-02	Water	05-Feb-2018 08:16	05-Feb-2018 10:21
BDC-104-180205	18B0048-03	Water	05-Feb-2018 08:56	05-Feb-2018 10:21
BDC-102-180205	18B0048-04	Water	05-Feb-2018 09:36	05-Feb-2018 10:21
BDC-101-180205	18B0048-05	Water	05-Feb-2018 10:06	05-Feb-2018 10:21
Trip blanks	18B0048-06	Water	05-Feb-2018 00:00	05-Feb-2018 10:21



The Boeing Company [Developmental Center]
P.O. Box 3707 MC 9U4-26
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

Case Narrative

Volatiles - EPA Method SW8260C

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

The LCS/LCSD percent recoveries and RPD were within control limits.

Wet Chemistry

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

Per the COC instructions the samples were allowed to settle and sample volume was collected from the clear portion.

Initial and continuing calibrations were within method requirements.

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

The LCS percent recoveries were within control limits.

The Duplicate RPD was within control limits.

The Matrix Spike percent recoveries were within control limits.

Gasoline Range Organics - WA-Ecology Method NW-TPHG

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

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

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

The LCS percent recoveries were within control limits.



The Boeing Company [Developmental Center]
P.O. Box 3707 MC 9U4-26
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31



Cooler Receipt Form

ARI Client: London / Boeing

Project Name: Tulsa Tukwila Regional GW

COC No(s): _____ NA

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

Assigned ARI Job No: 18 B0048

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
Time: 5.5

Temp Gun ID#: 17002565

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

Cooler Accepted by: BF Date: 2/5/18 Time: 1021

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

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

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI: NA BF 2/2/18

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

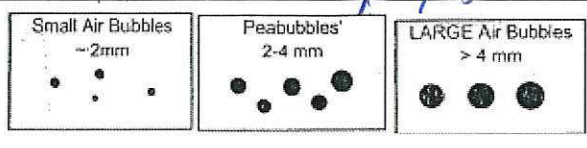
Samples Logged by: BF Date: 2/5/18 Time: 1140

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

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

Additional Notes, Discrepancies, & Resolutions:
BDC-104-180205 - 1 vial w/sm
TB-1 w/ pb

By: BF Date: 2/5/18



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



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-Dup1-180205
18B0048-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 02/05/2018 08:00

Instrument: NT3

Analyzed: 05-Feb-2018 14:30

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	98.3	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	101	%	



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Reported:
15-Feb-2018 15:31

BDC-Dup1-180205
18B0048-01 (Water)

Volatile Organic Compounds

Method: NWTPHg Sampled: 02/05/2018 08:00

Instrument: NT3 Analyzed: 05-Feb-2018 14:30

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	98.3	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	101	%	



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Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-Dup1-180205
18B0048-01 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 08:00

Instrument: DX500

Analyzed: 05-Feb-2018 15:39

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.319	mg-N/L	



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-Dup1-180205
18B0048-01RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 08:00

Instrument: DX500

Analyzed: 06-Feb-2018 12:28

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	100	10.0	127	mg-N/L	D

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	100	10.0	51.5	mg/L	D



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Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-103-180205

18B0048-02 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 02/05/2018 08:16

Instrument: NT3

Analyzed: 05-Feb-2018 14:56

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			<i>80-120 %</i>	<i>99.3</i>	<i>%</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>80-120 %</i>	<i>101</i>	<i>%</i>	



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Reported:
15-Feb-2018 15:31

BDC-103-180205

18B0048-02 (Water)

Volatile Organic Compounds

Method: NWTPHg

Sampled: 02/05/2018 08:16

Instrument: NT3

Analyzed: 05-Feb-2018 14:56

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	99.3	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	101	%	



The Boeing Company [Developmental Center] P.O. Box 3707 MC 9U4-26 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Carl Bach	Reported: 15-Feb-2018 15:31
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BDC-103-180205
18B0048-02 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 02/05/2018 08:16

Instrument: DX500 Analyzed: 05-Feb-2018 15:55

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.319	mg-N/L	



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-103-180205
18B0048-02RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 08:16

Instrument: DX500

Analyzed: 06-Feb-2018 12:45

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	100	10.0	128	mg-N/L	D

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	100	10.0	51.7	mg/L	D



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Seattle WA, 98124

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Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-104-180205

18B0048-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 02/05/2018 08:56

Instrument: NT3

Analyzed: 05-Feb-2018 15:22

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	99.7	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	94.4	%	



The Boeing Company [Developmental Center]
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Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-104-180205

18B0048-03 (Water)

Volatile Organic Compounds

Method: NWTPhg

Sampled: 02/05/2018 08:56

Instrument: NT3

Analyzed: 05-Feb-2018 15:22

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	99.7	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	94.4	%	



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Project Number: Boeing Regional GW Developmental Center
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Reported:
15-Feb-2018 15:31

BDC-104-180205

18B0048-03 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 08:56

Instrument: DX500

Analyzed: 05-Feb-2018 16:12

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.230	mg-N/L	

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



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Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-104-180205
18B0048-03RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 08:56

Instrument: DX500

Analyzed: 06-Feb-2018 13:02

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	2	0.200	4.76	mg/L	D



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Reported:
15-Feb-2018 15:31

BDC-102-180205
18B0048-04 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 02/05/2018 09:36

Instrument: NT3

Analyzed: 05-Feb-2018 15:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	95.3	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	97.4	%	



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Reported:
15-Feb-2018 15:31

BDC-102-180205

18B0048-04 (Water)

Volatile Organic Compounds

Method: NWTPhg

Sampled: 02/05/2018 09:36

Instrument: NT3

Analyzed: 05-Feb-2018 15:48

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	95.3	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	97.4	%	



The Boeing Company [Developmental Center] P.O. Box 3707 MC 9U4-26 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Carl Bach	Reported: 15-Feb-2018 15:31
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BDC-102-180205
18B0048-04 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 02/05/2018 09:36

Instrument: DX500 Analyzed: 05-Feb-2018 16:29

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.718	mg-N/L	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrite-N	14797-65-0	1	0.100	0.170	mg-N/L	



The Boeing Company [Developmental Center] P.O. Box 3707 MC 9U4-26 Seattle WA, 98124	Project: Boeing Regional GW Developmental Center Project Number: Boeing Regional GW Developmental Center Project Manager: Carl Bach	Reported: 15-Feb-2018 15:31
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BDC-102-180205
18B0048-04RE1 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 02/05/2018 09:36

Instrument: DX500 Analyzed: 06-Feb-2018 13:35

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	8.15	mg/L	D



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Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-101-180205
18B0048-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 02/05/2018 10:06

Instrument: NT3

Analyzed: 05-Feb-2018 16:14

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

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



The Boeing Company [Developmental Center]
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Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-101-180205

18B0048-05 (Water)

Volatile Organic Compounds

Method: NWTPHg

Sampled: 02/05/2018 10:06

Instrument: NT3

Analyzed: 05-Feb-2018 16:14

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

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



The Boeing Company [Developmental Center]
P.O. Box 3707 MC 9U4-26
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: Boeing Regional GW Developmental Center
Project Manager: Carl Bach

Reported:
15-Feb-2018 15:31

BDC-101-180205

18B0048-05 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 10:06

Instrument: DX500

Analyzed: 05-Feb-2018 17:19

Sample Preparation:

Preparation Method: SM 5310 A-00, 0.45um filtration

Preparation Batch: BGB0078

Sample Size: 5 mL

Prepared: 05-Feb-2018

Final Volume: 5 mL

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



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Reported:
15-Feb-2018 15:31

BDC-101-180205
18B0048-05RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 10:06

Instrument: DX500

Analyzed: 06-Feb-2018 14:26

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	5	0.500	9.64	mg-N/L	D



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15-Feb-2018 15:31

BDC-101-180205
18B0048-05RE2 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 02/05/2018 10:06

Instrument: DX500

Analyzed: 07-Feb-2018 13:03

Sample Preparation: Preparation Method: SM 5310 A-00, 0.45um filtration
Preparation Batch: BGB0078 Sample Size: 5 mL
Prepared: 05-Feb-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	20	2.00	28.9	mg/L	D



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Reported:
15-Feb-2018 15:31

Trip blanks
18B0048-06 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 02/05/2018 00:00

Instrument: NT3

Analyzed: 05-Feb-2018 13:38

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			<i>80-120 %</i>	<i>101</i>	<i>%</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>80-120 %</i>	<i>98.0</i>	<i>%</i>	



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15-Feb-2018 15:31

Trip blanks
18B0048-06 (Water)

Volatile Organic Compounds

Method: NWTPhg Sampled: 02/05/2018 00:00

Instrument: NT3 Analyzed: 05-Feb-2018 13:38

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGB0070 Sample Size: 10 mL
Prepared: 05-Feb-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	101	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	98.0	%	



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Reported:
15-Feb-2018 15:31

Volatile Organic Compounds - Quality Control

Batch BGB0070 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGB0070-BLK1)										
Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 11:24										
Benzene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Surrogate: Toluene-d8	4.95		ug/L	5.00		99.0	80-120			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	5.00		100	80-120			
Blank (BGB0070-BLK2)										
Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 11:24										
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.95		ug/L	5.00		99.0	80-120			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	5.00		100	80-120			
LCS (BGB0070-BS1)										
Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 09:18										
Benzene	10.3	0.20	ug/L	10.0		103	80-120			
Toluene	9.96	0.20	ug/L	10.0		99.6	80-120			
Ethylbenzene	9.85	0.20	ug/L	10.0		98.5	80-120			
m,p-Xylene	19.9	0.40	ug/L	20.0		99.4	80-121			
o-Xylene	9.76	0.20	ug/L	10.0		97.6	80-121			
Xylenes, total	29.6	0.60	ug/L	30.0		98.8	76-127			
Surrogate: Toluene-d8	5.08		ug/L	5.00		102	80-120			
Surrogate: 4-Bromofluorobenzene	5.23		ug/L	5.00		105	80-120			
LCS (BGB0070-BS2)										
Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 10:09										
Gasoline Range Organics (Tol-Nap)	973	100	ug/L	1000		97.3	72-128			
Surrogate: Toluene-d8	5.03		ug/L	5.00		101	80-120			
Surrogate: 4-Bromofluorobenzene	5.23		ug/L	5.00		105	80-120			
LCS Dup (BGB0070-BSD1)										
Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 09:43										
Benzene	10.4	0.20	ug/L	10.0		104	80-120	1.81	30	
Toluene	9.99	0.20	ug/L	10.0		99.9	80-120	0.29	30	
Ethylbenzene	10.0	0.20	ug/L	10.0		100	80-120	1.83	30	
m,p-Xylene	20.2	0.40	ug/L	20.0		101	80-121	1.52	30	



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15-Feb-2018 15:31

Volatile Organic Compounds - Quality Control

Batch BGB0070 - EPA 5030 (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGB0070-BSD1)				Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 09:43						
o-Xylene	10.1	0.20	ug/L	10.0		101	80-121	3.04	30	
Xylenes, total	30.2	0.60	ug/L	30.0		101	76-127	2.02	30	
Surrogate: Toluene-d8	5.01		ug/L	5.00		100	80-120			
Surrogate: 4-Bromofluorobenzene	5.27		ug/L	5.00		105	80-120			
LCS Dup (BGB0070-BSD2)				Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 10:34						
Gasoline Range Organics (Tol-Nap)	1060	100	ug/L	1000		106	72-128	8.39	30	
Surrogate: Toluene-d8	5.10		ug/L	5.00		102	80-120			
Surrogate: 4-Bromofluorobenzene	5.10		ug/L	5.00		102	80-120			



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15-Feb-2018 15:31

Wet Chemistry - Quality Control

Batch BGB0078 - SM 5310 A-00, 0.45um filtration

Instrument: DX500 Analyst: CDE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGB0078-BLK1)		Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 15:05								
Nitrate-N	ND	0.100	mg-N/L							U
Nitrite-N	ND	0.100	mg-N/L							U
Sulfate	ND	0.100	mg/L							U
LCS (BGB0078-BS1)		Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 15:22								
Nitrate-N	1.51	0.100	mg-N/L	1.50		101	90-110			
Nitrite-N	1.47	0.100	mg-N/L	1.50		98.1	90-110			
Sulfate	1.55	0.100	mg/L	1.50		103	90-110			
Duplicate (BGB0078-DUP1)		Source: 18B0048-04		Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 16:46						
Nitrate-N	0.723	0.100	mg-N/L		0.718			0.69	20	
Nitrite-N	0.169	0.100	mg-N/L		0.170			0.59	20	
Duplicate (BGB0078-DUP2)		Source: 18B0048-04RE1		Prepared: 05-Feb-2018 Analyzed: 06-Feb-2018 13:52						
Sulfate	7.04	0.500	mg/L		8.15			14.60	20	D
Matrix Spike (BGB0078-MS1)		Source: 18B0048-04		Prepared: 05-Feb-2018 Analyzed: 05-Feb-2018 17:02						
Nitrite-N	2.03	0.100	mg-N/L	2.00	0.170	92.9	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike (BGB0078-MS2)		Source: 18B0048-04		Prepared: 05-Feb-2018 Analyzed: 06-Feb-2018 13:18						
Nitrate-N	2.84	0.200	mg-N/L	2.00	0.718	106	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike (BGB0078-MS3)		Source: 18B0048-04RE1		Prepared: 05-Feb-2018 Analyzed: 06-Feb-2018 14:09						
Sulfate	16.9	1.00	mg/L	10.0	8.15	87.7	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										



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Certified Analyses included in this Report

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



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15-Feb-2018 15:31

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



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

NWTPHg in Water

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

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/11/2018
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2018
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018



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15-Feb-2018 15:31

Notes and Definitions

- U This analyte is not detected above the applicable reporting or detection limit.
- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
- E The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
- D The reported value is from a dilution
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- [2C] Indicates this result was quantified on the second column on a dual column analysis.

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 801
 Sample Number: BDC-101-180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.41 Time: 727 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ 729 End Purge: Date/Time: 5/1/2018 @ 739 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
732	13.8	390.2	4.63	6.55	118.8	LOW	11.41	<0.25	
735	13.9	390.8	4.51	6.51	117.6			0.25	
738	13.9	390.2	4.35	6.48	116.9		11.41		

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	13.9	390.0	4.45	6.48	116.8				
2	13.9	389.9	4.58	6.48	116.8				
3	13.9	389.9	4.50	6.48	116.9				
4	13.9	389.9	4.39	6.48	116.9				
Average:	13.9	389.9	4.48	6.48	116.9	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 721
 Sample Number: BDC-102-180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.18 Time: 654 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ 657 End Purge: Date/Time: 5/1/2018 @ 716 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
700	14.0	610	0.37	6.28	184.0	MED	11.22	<0.25	
703	14.1	620	0.34	6.32	182.3				
706	14.2	618	0.32	6.34	181.4		11.22	0.25	
709	14.2	609	0.26	6.35	180.1				
712	14.2	605	0.24	6.35	1781.0	LOW			
715	14.2	602	0.24	6.36	173.8			0.5	

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type DED BLADDER
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, LIGHT BROWN TINT, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	14.2	602	0.24	6.36	173.3				
2	14.2	602	0.24	6.36	172.8				
3	14.2	601	0.24	6.36	172.2				
4	14.2	601	0.23	6.36	171.3				
Average:	14.2	602	0.24	6.36	172.4	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	(8260) (8010) (8020) (NWT PH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWT PH-D) (NWT PH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 656
 Sample Number: BDC-103-180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.1 Time: 608 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ 631 End Purge: Date/Time: 5/1/2018 @ 641 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
634	12.1	901	0.28	5.92	189.9	LOW	11.18	<0.25	TURN PUMP DOWN
637	12.2	902	0.29	5.96	186.6		11.2		
640	12.1	902	0.27	5.97	185.0				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR WITH SUSPENDED SOLIDS, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	12.1	902	0.28	5.98	184.8				
2	12.1	902	0.27	5.98	184.7				
3	12.1	902	0.27	5.98	184.6				
4	12.1	902	0.27	5.98	184.5				
Average:	12.1	902	0.27	5.98	184.7	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): (DUP2)
 Comments: Duplicate location
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 600
 Sample Number: BDC-DUP2180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) _____ Time: _____ Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ End Purge: Date/Time: 5/1/2018 @ Gallons Purged: _____
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft	through cell	

SEE BDC-103 SCF FOR PURGE DATA

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type _____
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR WITH SUSPENDED SOLIDS, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	12.1	902	0.28	5.98	184.8				
2	12.1	902	0.27	5.98	184.7				
3	12.1	902	0.27	5.98	184.6				
4	12.1	902	0.27	5.98	184.5				
Average:	12.1	902	0.27	5.98	184.7	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	(8260) (8010) (8020) (NWT PH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWT PH-D) (NWT PH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: Duplicate to BDC-103
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 621
 Sample Number: BDC-104-180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 10.88 Time: 550 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ 558 End Purge: Date/Time: 5/1/2018 @ 619 Gallons Purged: 1
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
601	12.9	57.8	4.84	7.00	145.9	LOW	10.91	<0.25	
604	13.0	55.8	5.01	6.69	155.6		10.91	0.25	
607	13.0	54.8	4.90	6.58	158.9				
610	13.0	54.3	4.16	6.35	166.3		10.91	0.5	
613	13.1	54.1	4.12	6.23	169.0				
616	13.1	53.8	4.12	6.13	171.1			0.75	
618	13.1	53.6	4.23	6.11	171.8				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	13.1	53.6	4.25	6.10	171.9				
2	13.1	53.6	4.25	6.08	172.2				
3	13.1	53.6	4.26	6.09	172.4				
4	13.1	53.5	4.25	6.07	172.5				
Average:	13.1	53.6	4.25	6.09	172.3	#DIV/0!			

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
5	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 826
 Sample Number: MW-17A-180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.24 Time: 800 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ 804 End Purge: Date/Time: 5/1/2018 @ 825 Gallons Purged: 0.25
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
807	15.7	5120	0.34	7.07	50.8	MED	12.38	<0.25	TURN PUMP DOWN
810	15.8	5066	0.21	7.10	-31.8		12.43	<0.25	
813	15.9	4999	0.18	7.13	-84.2		12.45		AT LOWEST SETTING
816	16.0	4985	0.17	7.13	-98.0				
819	16.0	4958	0.18	7.14	-111.9			0.25	
822	16.0	4957	0.19	7.14	-121.6		12.51		
824	16.0	4952	0.19	7.15	-125.9				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, DARK BROWN/AMBER COLOR, INJECTION FLUID ODOR/NS (FOAMY)

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	16.0	4951	0.19	7.15	-126.5				
2	16.0	4950	0.20	7.15	-127.3				
3	16.0	4950	0.19	7.15	-127.3				
4	16.0	4950	0.19	7.15	-128.3				
Average:	16.0	4950	0.19	7.15	-127.4	#DIV/0!		2.4 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
3	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silicic acid)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 906
 Sample Number: MW-18A-180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 11.91 Time: 837 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ 841 End Purge: Date/Time: 5/1/2018 @ 902 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
844	15.6	412.1	1.27	8.17	-72.8	LOW	11.93	<0.25	
847	15.7	396.6	1.22	7.50	-49.6		11.93	<0.25	
850	15.8	386.3	1.13	7.27	-40.1			0.25	
853	15.9	382.1	1.09	7.11	-33.1		11.93		
856	15.9	380.5	0.99	6.94	-24.4				
859	16.0	385.4	1.01	6.84	-19.2			0.5	
901	15.8	384.2	0.86	6.80	-16.6				

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	15.8	384.1	0.83	6.80	-16.1				
2	15.9	384.0	0.82	6.79	-15.8				
3	15.9	383.7	0.82	6.79	-15.5				
4	15.9	383.2	0.84	6.78	-15.1				
Average:	15.9	383.8	0.83	6.79	-15.6	#DIV/0!		0.0 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silica)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018

Groundwater Low-Flow Sample Collection Form

Project Name: Developmental Center Project Number: 0025217.099.039
 Event: Semiannual May 2018 Date/Time: 5/1/2018 @ 936
 Sample Number: MW-21A-180501 Weather: 50'S, CLOUDY
 Landau Representative: JHA

WATER LEVEL/WELL/PURGE DATA

Well Condition: Secure (YES) Damaged (NO) Describe: _____
 DTW Before Purging (ft) 12.12 Time: 911 Flow through cell vol. _____ GW Meter No.(s) HERON 1
 Begin Purge: Date/Time: 5/1/2018 @ 914 End Purge: Date/Time: 5/1/2018 @ 933 Gallons Purged: 0.5
 Purge water disposed to: 55-gal Drum Storage Tank Ground Other _____

Time	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Internal Purge Volume (gal)	Comments/Observations
Purge Goals: Stabilization of Parameters for three consecutive readings within the following limits								>= 1 flow through cell	
	+/- 3%	+/- 3%	+/- 10%	+/- 0.1 units	+/- 10 mV	+/- 10%	< 0.3 ft		
917	13.6	234.0	3.79	6.43	61.3	LOW	12.16	<0.25	
920	14.0	230.0	3.56	6.24	67.5		12.16	<0.25	
923	14.2	221.1	4.20	6.17	72.4			0.25	
926	14.1	222.0	3.49	6.13	76.9		12.18		
929	14.0	222.5	3.49	6.12	78.8				
932	14.0	222.8	3.30	6.11	80.2			0.5	

SAMPLE COLLECTION DATA

Sample Collected With: Bailer Pump/Pump Type PERISTALTIC
 Made of: Stainless Steel PVC Teflon Polyethylene Other Dedicated
 Decon Procedure: Alconox Wash Tap Rinse DI Water Dedicated
 (By Numerical Order) Other _____
 Sample Description (color, turbidity, odor, sheen, etc.): CLEAR WITH SOME SUSPENDED SOLIDS, COLORLESS, NO/NS

Replicate	Temp (°F/°C)	Cond. (uS/cm)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	DTW (ft)	Ferrous iron (Fe II)	Comments/Observations
1	14.0	222.9	3.31	6.11	80.4				
2	14.0	223.0	3.45	6.11	80.6				
3	14.0	223.1	3.58	6.11	80.7				
4	14.0	223.3	3.62	6.11	80.9				
Average:	14.0	223.1	3.49	6.11	80.7	#DIV/0!		0.0 mg/L	

QUANTITY	TYPICAL ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	(8260) (8010) (8020) (NWTPH-G) (NWTPH-Gx) (BTEX) WA <input type="checkbox"/> OR <input type="checkbox"/>
	(8270) (PAH) (NWTPH-D) (NWTPH-Dx) (TPH-HCID) (8081) (8141) (Oil & Grease) WA <input type="checkbox"/> OR <input type="checkbox"/>
1	(pH) (Conductivity) (TDS) (TSS) (BOD) (Turbidity) (Alkalinity) (HCO3/CO3) (Cl) (SO4) (NO3) (NO2) (F)
	(COD) (TOC) (Total PO4) (Total Kiedahl Nitrogen) (NH3) (NO3/NO2)
	(Total Cyanide) (WAD Cyanide) (Free Cyanide)
	(Total Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na)
	(Dissolved Metals) (As) (Sb) (Ba) (Be) (Ca) (Cd) (Co) (Cr) (Cu) (Fe) (Pb) (Mg) (Mn) (Ni) (Ag) (Se) (Tl) (V) (Zn) (Hg) (K) (Na) (Hardness) (Silic)
	VOC (Boeing short list)
	Methane Ethane Ethene Acetylene
	Ferrous Iron test
	others

Duplicate Sample No(s): _____
 Comments: _____
 Signature: JHA Date: 5/1/2018



Analytical Resources, Incorporated
Analytical Chemists and Consultants

16 May 2018

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

RE: Boeing Regional GW Developmental Center

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

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

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

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
18E0031	N/A

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

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

Analytical Resources, Inc.



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





- 18E0031
- Seattle/Edmonds (425) 778-0907
 - Tacoma (253) 926-2493
 - Spokane (509) 327-9737
 - Portland (503) 542-1080
 - _____

Chain-of-Custody Record

Date 5/1/18
Page 1 of 1

Project Name: <u>DC Regional Ge</u> Project No. <u>005217-099-039</u>					Testing Parameters										Turnaround Time <input type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____					
Project Location/Event: <u>Tukwila / May 2018 / AOC-5 Area</u>					<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs (82600)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX (82600)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH (82600)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Sulfate (NWPH-6)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Nitrate (B200.0)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Nitrite (B200.0)</div> </div>															
Sampler's Name: <u>Jeovani Huerta</u>																				
Project Contact: <u>Chris Kimmel & Jen Parsons</u>																				
Send Results To: <u>CKimmel & Parsons</u>															Observations/Comments <input checked="" type="checkbox"/> Allow water samples to settle, collect aliquot from clear portion <input type="checkbox"/> NWTPH-Dx - run acid wash silica gel cleanup <input type="checkbox"/> Analyze for EPH if no specific product identified VOC/BTEX/VPH (soil): <input type="checkbox"/> non-preserved <input type="checkbox"/> preserved w/methanol <input type="checkbox"/> preserved w/sodium bisulfate <input type="checkbox"/> Freeze upon receipt <input type="checkbox"/> Dissolved metal water samples field filtered Other <u>* -48-hr hold time</u> <u>Nitrates</u>					
Sample I.D.	Date	Time	Matrix	No. of Containers																
BDC-Dup2-180501	5/1/18	600	AQ	6	X	X	X	X												
BDC-104-180501	5/1/18	621	AQ	6	X	X	X	X												
BDC-103-180501	5/1/18	656	AQ	6	X	X	X	X												
BDC-102-180501	5/1/18	721	AQ	6	X	X	X	X												
BDC-101-180501	5/1/18	801	AQ	6	X	X	X	X												
MW-17A-180501	5/1/18	826	AQ	4	X			X		X										FOAMY
MW-18A-180501	5/1/18	906	AQ	1				X		X										
MW-21A-180501	5/1/18	936	AQ	1				X		X										
Trip blanks	-	-	AQ	6	X	X	X													

Special Shipment/Handling or Storage Requirements: <u>on ice</u>	Method of Shipment: <u>lab pickup</u>
--	---------------------------------------

Relinquished by Signature: <u>[Signature]</u> Printed Name: <u>Jeovani Huerta</u> Company: <u>Landau Associates</u> Date: <u>5/1/18</u> Time: <u>1845</u>	Received by Signature: <u>[Signature]</u> Printed Name: <u>Sarabwate</u> Company: <u>ARI</u> Date: <u>05/01/18</u> Time: <u>1023</u>	Relinquished by Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____	Received by Signature: _____ Printed Name: _____ Company: _____ Date: _____ Time: _____
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The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BDC-DUP2-18501	18E0031-01	Water	01-May-2018 06:00	02-May-2018 10:23
BDC-104-18501	18E0031-02	Water	01-May-2018 06:21	02-May-2018 10:23
BDC-103-18501	18E0031-03	Water	01-May-2018 06:56	02-May-2018 10:23
BDC-102-18501	18E0031-04	Water	01-May-2018 07:21	02-May-2018 10:23
BDC-101-18501	18E0031-05	Water	01-May-2018 08:01	02-May-2018 10:23
MW-17A-18501	18E0031-06	Water	01-May-2018 08:26	02-May-2018 10:23
MW-18A-18501	18E0031-07	Water	01-May-2018 09:06	02-May-2018 10:23
MW-21A-18501	18E0031-08	Water	01-May-2018 09:36	02-May-2018 10:23
Trip Blanks	18E0031-09	Water	01-May-2018 00:00	02-May-2018 10:23



The Boeing Company [Developmental Center]
PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

Case Narrative

Volatiles - EPA Method SW8260C

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

Initial and continuing calibrations were within method requirements with the exception of vinyl acetate which is out of control low in the CCAL and trichlorofluoromethane is out of control high .
All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

The LCS/LCSD percent recoveries and RPD were within control limits.

The VOCs samples 18E0031-06 contained a large air bubble at the time of the analysis and 18E0031-09 contained a peabubble.

Gasoline Range Organics - WA-Ecology Method NW-TPHG

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

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

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

The LCS percent recoveries were within control limits.

The VOCs samples 18E0031-06 contained a large air bubble at the time of the analysis.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times with the exception of select nitrate samples which were originally analyzed in hold and required dilutions outside of the method recommended holding time.

Initial and continuing calibrations were within method requirements.



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16-May-2018 16:32

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

The LCS percent recoveries were within control limits.

Per the COC instructions the samples were allowed to settle and sample volume was collected from the clear portion.



Cooler Receipt Form

ARI Client: London Edwards
 COC No(s): _____ NA
 Assigned ARI Job No: 18E0031

Project Name: _____
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ NA

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
 Time: 12:36
 If cooler temperature is out of compliance fill out form 00070F cooler # 0.5°C - 0.1°C Temp Gun ID#: 0005206

Cooler Accepted by: JTB Date: 5/2/18 Time: 10:23

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? NA YES NO
 Were all bottles sealed in individual plastic bags? YES NO
 Did all bottles arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? YES NO
 Did the number of containers listed on COC match with the number of containers received? YES NO
 Did all bottle labels and tags agree with custody papers? YES NO
 Were all bottles used correct for the requested analyses? YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? YES NO
 Date VOC Trip Blank was made at ARI... NA 4/25/18
 Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: Set Date: 5/2/18 Time: 1405

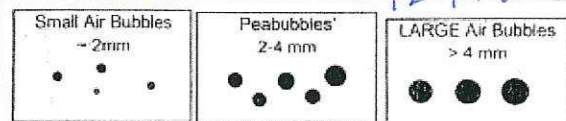
**** Notify Project Manager of discrepancies or concerns ****

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

Additional Notes, Discrepancies, & Resolutions:

VOC vials for MW-17A-180501 & Trip blanks
All have air bubbles

By: Set Date: 5/2/18



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



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-DUP2-18501
18E0031-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 06:00

Instrument: NT2

Analyzed: 03-May-2018 11:38

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	95.1	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	89.2	%	



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-DUP2-18501
18E0031-01 (Water)

Volatile Organic Compounds

Method: NWTPHg Sampled: 05/01/2018 06:00

Instrument: NT2 Analyzed: 03-May-2018 11:38

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	95.1	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	89.2	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-DUP2-18501
18E0031-01 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 06:00

Instrument: DX2100

Analyzed: 02-May-2018 20:29

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-DUP2-18501
18E0031-01RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 06:00

Instrument: DX2100

Analyzed: 03-May-2018 10:59

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	50	5.00	5.00	104	mg-N/L	H, D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	50	5.00	5.00	71.3	mg/L	D



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-104-18501
18E0031-02 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 06:21

Instrument: NT2

Analyzed: 03-May-2018 11:58

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	92.8	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	91.4	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-104-18501
18E0031-02 (Water)

Volatile Organic Compounds

Method: NWTPHg

Sampled: 05/01/2018 06:21

Instrument: NT2

Analyzed: 03-May-2018 11:58

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	92.8	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	91.4	%	



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-104-18501
18E0031-02 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 06:21

Instrument: DX2100

Analyzed: 02-May-2018 20:49

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	1	0.100	0.100	1.22	mg-N/L	

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



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Reported:
16-May-2018 16:32

BDC-104-18501
18E0031-02RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 06:21

Instrument: DX2100

Analyzed: 03-May-2018 12:17

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	2	0.200	0.200	4.05	mg/L	D



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-103-18501
18E0031-03 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 06:56

Instrument: NT2

Analyzed: 03-May-2018 12:19

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	94.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	91.1	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-103-18501
18E0031-03 (Water)

Volatile Organic Compounds

Method: NWTPHg Sampled: 05/01/2018 06:56

Instrument: NT2 Analyzed: 03-May-2018 12:19

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	94.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	91.1	%	



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-103-18501
18E0031-03 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 06:56

Instrument: DX2100

Analyzed: 02-May-2018 21:09

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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Reported:
16-May-2018 16:32

BDC-103-18501
18E0031-03RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 06:56

Instrument: DX2100

Analyzed: 03-May-2018 11:18

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	50	5.00	5.00	104	mg-N/L	H, D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	50	5.00	5.00	71.6	mg/L	D



The Boeing Company [Developmental Center]
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
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Reported:
16-May-2018 16:32

BDC-102-18501
18E0031-04 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 07:21

Instrument: NT2

Analyzed: 03-May-2018 12:39

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	93.4	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	89.1	%	



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

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-102-18501
18E0031-04 (Water)

Volatile Organic Compounds

Method: NWTPHg Sampled: 05/01/2018 07:21

Instrument: NT2 Analyzed: 03-May-2018 12:39

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	93.4	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	89.1	%	



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Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-102-18501
18E0031-04 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 07:21

Instrument: DX2100

Analyzed: 02-May-2018 21:30

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-102-18501
18E0031-04RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 07:21

Instrument: DX2100

Analyzed: 03-May-2018 11:38

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	20	2.00	2.00	13.4	mg-N/L	H, D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	20	2.00	2.00	29.5	mg/L	D



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Project: Boeing Regional GW Developmental Center
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Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

BDC-101-18501
18E0031-05 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 08:01

Instrument: NT2

Analyzed: 03-May-2018 13:00

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
<i>Surrogate: Toluene-d8</i>			80-120 %	91.2	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.1	%	



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Reported:
16-May-2018 16:32

BDC-101-18501
18E0031-05 (Water)

Volatile Organic Compounds

Method: NWTPHg Sampled: 05/01/2018 08:01

Instrument: NT2 Analyzed: 03-May-2018 13:00

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	91.2	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	92.1	%	



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Project: Boeing Regional GW Developmental Center
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Reported:
16-May-2018 16:32

BDC-101-18501
18E0031-05 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 08:01

Instrument: DX2100

Analyzed: 02-May-2018 21:51

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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Reported:
16-May-2018 16:32

BDC-101-18501
18E0031-05RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 08:01

Instrument: DX2100

Analyzed: 03-May-2018 11:57

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	20	2.00	2.00	15.9	mg-N/L	H, D

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	20	2.00	2.00	44.5	mg/L	D



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

MW-17A-18501
18E0031-06 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 08:26

Instrument: NT2

Analyzed: 03-May-2018 13:23

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 1 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	5.00	ND	ug/L	U
Vinyl Chloride	75-01-4	1	2.00	2.82	ug/L	
Bromomethane	74-83-9	1	10.0	ND	ug/L	U
Chloroethane	75-00-3	1	2.00	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	2.00	ND	ug/L	U
Acrolein	107-02-8	1	50.0	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	2.00	ND	ug/L	U
Acetone	67-64-1	1	50.0	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	2.00	ND	ug/L	U
Bromoethane	74-96-4	1	2.00	ND	ug/L	U
Iodomethane	74-88-4	1	10.0	ND	ug/L	U
Methylene Chloride	75-09-2	1	10.0	ND	ug/L	U
Acrylonitrile	107-13-1	1	10.0	ND	ug/L	U
Carbon Disulfide	75-15-0	1	2.00	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	2.00	ND	ug/L	U
Vinyl Acetate	108-05-4	1	2.00	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	2.00	ND	ug/L	U
2-Butanone	78-93-3	1	50.0	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	2.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	2.00	ND	ug/L	U
Chloroform	67-66-3	1	2.00	ND	ug/L	U
Bromochloromethane	74-97-5	1	2.00	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	2.00	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	2.00	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	2.00	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	2.00	ND	ug/L	U
Benzene	71-43-2	1	2.00	ND	ug/L	U
Trichloroethene	79-01-6	1	2.00	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	2.00	ND	ug/L	U
Bromodichloromethane	75-27-4	1	2.00	ND	ug/L	U
Dibromomethane	74-95-3	1	2.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	50.0	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	2.00	ND	ug/L	U
Toluene	108-88-3	1	2.00	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	2.00	ND	ug/L	U
2-Hexanone	591-78-6	1	50.0	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

MW-17A-18501
18E0031-06 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 08:26

Instrument: NT2

Analyzed: 03-May-2018 13:23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	2.00	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	2.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	2.00	ND	ug/L	U
Dibromochloromethane	124-48-1	1	2.00	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	2.00	ND	ug/L	U
Chlorobenzene	108-90-7	1	2.00	ND	ug/L	U
Ethylbenzene	100-41-4	1	2.00	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	2.00	ND	ug/L	U
m,p-Xylene	179601-23-1	1	4.00	ND	ug/L	U
o-Xylene	95-47-6	1	2.00	ND	ug/L	U
Styrene	100-42-5	1	2.00	ND	ug/L	U
Bromoform	75-25-2	1	2.00	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	2.00	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	5.00	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	10.0	ND	ug/L	U
n-Propylbenzene	103-65-1	1	2.00	ND	ug/L	U
Bromobenzene	108-86-1	1	2.00	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	2.00	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	2.00	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	2.00	ND	ug/L	U
t-Butylbenzene	98-06-6	1	2.00	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	2.00	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	2.00	ND	ug/L	U
s-Butylbenzene	135-98-8	1	2.00	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	2.00	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	2.00	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	2.00	ND	ug/L	U
n-Butylbenzene	104-51-8	1	2.00	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	2.00	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	5.00	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	5.00	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	5.00	ND	ug/L	U
Naphthalene	91-20-3	1	5.00	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	5.00	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	113	%	
Surrogate: Toluene-d8			80-120 %	95.0	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	92.4	%	
Surrogate: 1,2-Dichlorobenzene-d4			80-120 %	102	%	



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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

MW-17A-18501
18E0031-06RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 08:26

Instrument: DX2100

Analyzed: 03-May-2018 02:29

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Nitrate-N	14797-55-8	5	0.500	0.500	ND	mg-N/L	U

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



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

MW-18A-18501
18E0031-07 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 09:06

Instrument: DX2100

Analyzed: 02-May-2018 22:11

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

MW-18A-18501
18E0031-07RE1 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 09:06

Instrument: DX2100

Analyzed: 03-May-2018 12:36

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	20	2.00	2.00	36.8	mg/L	D



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

MW-21A-18501
18E0031-08 (Water)

Wet Chemistry

Method: EPA 300.0

Sampled: 05/01/2018 09:36

Instrument: DX2100

Analyzed: 02-May-2018 22:32

Sample Preparation:

Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063
Prepared: 02-May-2018

Sample Size: 5 mL
Final Volume: 5 mL

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



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MW-21A-18501
18E0031-08RE1 (Water)

Wet Chemistry

Method: EPA 300.0 Sampled: 05/01/2018 09:36

Instrument: DX2100 Analyzed: 03-May-2018 12:56

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BGE0063 Sample Size: 5 mL
Prepared: 02-May-2018 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Sulfate	14808-79-8	5	0.500	0.500	7.53	mg/L	D



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PO Box 3703 MS 2R-96
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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

Trip Blanks
18E0031-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 00:00

Instrument: NT2

Analyzed: 03-May-2018 10:37

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Bromoethane	74-96-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.20	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	5.00	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U



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Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

Trip Blanks
18E0031-09 (Water)

Volatile Organic Compounds

Method: EPA 8260C

Sampled: 05/01/2018 00:00

Instrument: NT2

Analyzed: 03-May-2018 10:37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.20	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.50	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.20	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	109	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	95.0	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.5	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	104	%	



The Boeing Company [Developmental Center]
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Seattle WA, 98124

Project: Boeing Regional GW Developmental Center
Project Number: 0025217.099.039
Project Manager: Jennifer Parsons

Reported:
16-May-2018 16:32

Trip Blanks
18E0031-09 (Water)

Volatile Organic Compounds

Method: NWTPHg Sampled: 05/01/2018 00:00

Instrument: NT2 Analyzed: 03-May-2018 10:37

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BGE0085 Sample Size: 10 mL
Prepared: 03-May-2018 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	95.0	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	92.5	%	



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16-May-2018 16:32

Volatile Organic Compounds - Quality Control

Batch BGE0085 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0085-BLK1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 09:56								
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
Surrogate: Toluene-d8	4.66		ug/L	5.00		93.2	80-120			
Surrogate: 4-Bromofluorobenzene	4.65		ug/L	5.00		93.0	80-120			
Blank (BGE0085-BLK2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 09:56								
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.20	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Bromoethane	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.20	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U



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Volatile Organic Compounds - Quality Control

Batch BGE0085 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0085-BLK2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 09:56								
Dibromomethane	ND	0.20	ug/L							U
4-Methyl-2-Pentanone	ND	5.00	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.20	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.50	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.20	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U



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16-May-2018 16:32

Volatile Organic Compounds - Quality Control

Batch BGE0085 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0085-BLK2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 09:56								
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.21		ug/L	5.00		104	80-129			
Surrogate: Toluene-d8	4.66		ug/L	5.00		93.2	80-120			
Surrogate: 4-Bromofluorobenzene	4.65		ug/L	5.00		93.0	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.22		ug/L	5.00		104	80-120			
LCS (BGE0085-BS1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 07:55								
Gasoline Range Organics (Tol-Nap)	934	100	ug/L	1000		93.4	72-128			
Surrogate: Toluene-d8	5.04		ug/L	5.00		101	80-120			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	5.00		100	80-120			
LCS (BGE0085-BS2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 08:15								
Chloromethane	8.23	0.50	ug/L	10.0		82.3	60-138			
Vinyl Chloride	9.52	0.20	ug/L	10.0		95.2	66-133			
Bromomethane	9.76	1.00	ug/L	10.0		97.6	72-131			
Chloroethane	10.4	0.20	ug/L	10.0		104	60-155			
Trichlorofluoromethane	12.1	0.20	ug/L	10.0		121	80-129			Q
Acrolein	47.3	5.00	ug/L	50.0		94.6	52-144			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.5	0.20	ug/L	10.0		105	76-129			
Acetone	46.0	5.00	ug/L	50.0		92.0	58-142			
1,1-Dichloroethene	9.83	0.20	ug/L	10.0		98.3	69-135			
Bromoethane	10.4	0.20	ug/L	10.0		104	78-128			
Iodomethane	10.5	1.00	ug/L	10.0		105	56-147			
Methylene Chloride	9.60	1.00	ug/L	10.0		96.0	65-135			
Acrylonitrile	8.49	1.00	ug/L	10.0		84.9	64-134			
Carbon Disulfide	9.53	0.20	ug/L	10.0		95.3	78-125			
trans-1,2-Dichloroethene	9.57	0.20	ug/L	10.0		95.7	78-128			
Vinyl Acetate	7.98	0.20	ug/L	10.0		79.8	55-138			Q
1,1-Dichloroethane	9.60	0.20	ug/L	10.0		96.0	76-124			
2-Butanone	43.8	5.00	ug/L	50.0		87.6	61-140			



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Volatile Organic Compounds - Quality Control

Batch BGE0085 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0085-BS2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 08:15								
2,2-Dichloropropane	10.6	0.20	ug/L	10.0		106	78-125			
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	80-121			
Chloroform	10.4	0.20	ug/L	10.0		104	80-122			
Bromochloromethane	10.1	0.20	ug/L	10.0		101	80-121			
1,1,1-Trichloroethane	10.7	0.20	ug/L	10.0		107	79-123			
1,1-Dichloropropene	10.4	0.20	ug/L	10.0		104	80-120			
Carbon tetrachloride	10.9	0.20	ug/L	10.0		109	53-137			
1,2-Dichloroethane	10.5	0.20	ug/L	10.0		105	75-123			
Benzene	10.1	0.20	ug/L	10.0		101	80-120			
Trichloroethene	10.1	0.20	ug/L	10.0		101	80-120			
1,2-Dichloropropane	9.65	0.20	ug/L	10.0		96.5	80-120			
Bromodichloromethane	10.1	0.20	ug/L	10.0		101	80-121			
Dibromomethane	10.4	0.20	ug/L	10.0		104	80-120			
4-Methyl-2-Pentanone	46.7	5.00	ug/L	50.0		93.4	67-133			
cis-1,3-Dichloropropene	9.10	0.20	ug/L	10.0		91.0	80-124			
Toluene	9.72	0.20	ug/L	10.0		97.2	80-120			
trans-1,3-Dichloropropene	9.22	0.20	ug/L	10.0		92.2	71-127			
2-Hexanone	45.6	5.00	ug/L	50.0		91.3	69-133			
1,1,2-Trichloroethane	9.96	0.20	ug/L	10.0		99.6	80-121			
1,3-Dichloropropane	10.6	0.20	ug/L	10.0		106	80-120			
Tetrachloroethene	10.5	0.20	ug/L	10.0		105	80-120			
Dibromochloromethane	10.8	0.20	ug/L	10.0		108	65-135			
1,2-Dibromoethane	9.62	0.20	ug/L	10.0		96.2	80-121			
Chlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120			
1,1,1,2-Tetrachloroethane	10.5	0.20	ug/L	10.0		105	80-120			
m,p-Xylene	20.9	0.40	ug/L	20.0		105	80-121			
o-Xylene	10.7	0.20	ug/L	10.0		107	80-121			
Xylenes, total	31.6	0.60	ug/L	30.0		105	76-127			
Styrene	9.79	0.20	ug/L	10.0		97.9	80-124			
Bromoform	10.5	0.20	ug/L	10.0		105	51-134			
1,1,2,2-Tetrachloroethane	9.63	0.20	ug/L	10.0		96.3	77-123			
1,2,3-Trichloropropane	9.96	0.50	ug/L	10.0		99.6	76-125			
trans-1,4-Dichloro 2-Butene	9.37	1.00	ug/L	10.0		93.7	55-129			
n-Propylbenzene	10.5	0.20	ug/L	10.0		105	78-130			



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16-May-2018 16:32

Volatile Organic Compounds - Quality Control

Batch BGE0085 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BGE0085-BS2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 08:15								
Bromobenzene	10.3	0.20	ug/L	10.0		103	80-120			
Isopropyl Benzene	10.9	0.20	ug/L	10.0		109	80-128			
2-Chlorotoluene	10.5	0.20	ug/L	10.0		105	78-122			
4-Chlorotoluene	10.6	0.20	ug/L	10.0		106	80-121			
t-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-125			
1,3,5-Trimethylbenzene	10.9	0.20	ug/L	10.0		109	80-129			
1,2,4-Trimethylbenzene	11.0	0.20	ug/L	10.0		110	80-127			
s-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-129			
4-Isopropyl Toluene	11.0	0.20	ug/L	10.0		110	79-130			
1,3-Dichlorobenzene	10.5	0.20	ug/L	10.0		105	80-120			
1,4-Dichlorobenzene	9.83	0.20	ug/L	10.0		98.3	80-120			
n-Butylbenzene	10.6	0.20	ug/L	10.0		106	74-129			
1,2-Dichlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			
1,2-Dibromo-3-chloropropane	9.85	0.50	ug/L	10.0		98.5	62-123			
1,2,4-Trichlorobenzene	10.5	0.50	ug/L	10.0		105	64-124			
Hexachloro-1,3-Butadiene	9.92	0.50	ug/L	10.0		99.2	58-123			
Naphthalene	9.79	0.50	ug/L	10.0		97.9	50-134			
1,2,3-Trichlorobenzene	10.3	0.50	ug/L	10.0		103	49-133			
Surrogate: 1,2-Dichloroethane-d4	5.22		ug/L	5.00		104	80-129			
Surrogate: Toluene-d8	4.99		ug/L	5.00		99.8	80-120			
Surrogate: 4-Bromofluorobenzene	5.11		ug/L	5.00		102	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.07		ug/L	5.00		101	80-120			
LCS Dup (BGE0085-BSD1)		Prepared: 03-May-2018 Analyzed: 03-May-2018 08:35								
Gasoline Range Organics (Tol-Nap)	940	100	ug/L	1000		94.0	72-128	0.58	30	
Surrogate: Toluene-d8	5.01		ug/L	5.00		100	80-120			
Surrogate: 4-Bromofluorobenzene	5.20		ug/L	5.00		104	80-120			
LCS Dup (BGE0085-BSD2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 08:56								
Chloromethane	8.79	0.50	ug/L	10.0		87.9	60-138	6.64	30	
Vinyl Chloride	9.79	0.20	ug/L	10.0		97.9	66-133	2.82	30	
Bromomethane	9.70	1.00	ug/L	10.0		97.0	72-131	0.62	30	
Chloroethane	10.6	0.20	ug/L	10.0		106	60-155	2.33	30	
Trichlorofluoromethane	12.1	0.20	ug/L	10.0		121	80-129	0.35	30	Q
Acrolein	48.0	5.00	ug/L	50.0		96.0	52-144	1.53	30	



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Volatile Organic Compounds - Quality Control

Batch BGE0085 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0085-BSD2)				Prepared: 03-May-2018 Analyzed: 03-May-2018 08:56						
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.4	0.20	ug/L	10.0		104	76-129	0.49	30	
Acetone	45.3	5.00	ug/L	50.0		90.6	58-142	1.52	30	
1,1-Dichloroethene	9.93	0.20	ug/L	10.0		99.3	69-135	1.00	30	
Bromoethane	10.1	0.20	ug/L	10.0		101	78-128	2.64	30	
Iodomethane	10.3	1.00	ug/L	10.0		103	56-147	1.66	30	
Methylene Chloride	9.61	1.00	ug/L	10.0		96.1	65-135	0.15	30	
Acrylonitrile	8.48	1.00	ug/L	10.0		84.8	64-134	0.10	30	
Carbon Disulfide	9.61	0.20	ug/L	10.0		96.1	78-125	0.78	30	
trans-1,2-Dichloroethene	9.59	0.20	ug/L	10.0		95.9	78-128	0.21	30	
Vinyl Acetate	8.19	0.20	ug/L	10.0		81.9	55-138	2.58	30	Q
1,1-Dichloroethane	9.68	0.20	ug/L	10.0		96.8	76-124	0.81	30	
2-Butanone	43.1	5.00	ug/L	50.0		86.1	61-140	1.70	30	
2,2-Dichloropropane	10.1	0.20	ug/L	10.0		101	78-125	5.64	30	
cis-1,2-Dichloroethene	10.3	0.20	ug/L	10.0		103	80-121	2.37	30	
Chloroform	9.94	0.20	ug/L	10.0		99.4	80-122	4.02	30	
Bromochloromethane	10.2	0.20	ug/L	10.0		102	80-121	1.00	30	
1,1,1-Trichloroethane	10.3	0.20	ug/L	10.0		103	79-123	4.01	30	
1,1-Dichloropropene	10.7	0.20	ug/L	10.0		107	80-120	2.51	30	
Carbon tetrachloride	10.6	0.20	ug/L	10.0		106	53-137	2.32	30	
1,2-Dichloroethane	10.4	0.20	ug/L	10.0		104	75-123	0.76	30	
Benzene	10.4	0.20	ug/L	10.0		104	80-120	2.56	30	
Trichloroethene	10.3	0.20	ug/L	10.0		103	80-120	1.66	30	
1,2-Dichloropropane	9.84	0.20	ug/L	10.0		98.4	80-120	1.94	30	
Bromodichloromethane	10.3	0.20	ug/L	10.0		103	80-121	1.59	30	
Dibromomethane	10.3	0.20	ug/L	10.0		103	80-120	1.51	30	
4-Methyl-2-Pentanone	49.3	5.00	ug/L	50.0		98.5	67-133	5.31	30	
cis-1,3-Dichloropropene	9.31	0.20	ug/L	10.0		93.1	80-124	2.24	30	
Toluene	10.1	0.20	ug/L	10.0		101	80-120	3.53	30	
trans-1,3-Dichloropropene	9.18	0.20	ug/L	10.0		91.8	71-127	0.38	30	
2-Hexanone	45.5	5.00	ug/L	50.0		91.0	69-133	0.32	30	
1,1,2-Trichloroethane	10.0	0.20	ug/L	10.0		100	80-121	0.67	30	
1,3-Dichloropropane	10.3	0.20	ug/L	10.0		103	80-120	2.28	30	
Tetrachloroethene	10.2	0.20	ug/L	10.0		102	80-120	2.86	30	
Dibromochloromethane	10.7	0.20	ug/L	10.0		107	65-135	1.52	30	
1,2-Dibromoethane	9.71	0.20	ug/L	10.0		97.1	80-121	0.91	30	



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Project: Boeing Regional GW Developmental Center
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Reported:
16-May-2018 16:32

Volatile Organic Compounds - Quality Control

Batch BGE0085 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BGE0085-BSD2)		Prepared: 03-May-2018 Analyzed: 03-May-2018 08:56								
Chlorobenzene	10.2	0.20	ug/L	10.0		102	80-120	1.38	30	
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120	0.41	30	
1,1,1,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	80-120	1.61	30	
m,p-Xylene	20.9	0.40	ug/L	20.0		104	80-121	0.32	30	
o-Xylene	10.7	0.20	ug/L	10.0		107	80-121	0.54	30	
Xylenes, total	31.5	0.60	ug/L	30.0		105	76-127	0.39	30	
Styrene	10.2	0.20	ug/L	10.0		102	80-124	3.99	30	
Bromoform	10.5	0.20	ug/L	10.0		105	51-134	0.14	30	
1,1,2,2-Tetrachloroethane	9.73	0.20	ug/L	10.0		97.3	77-123	1.03	30	
1,2,3-Trichloropropane	9.69	0.50	ug/L	10.0		96.9	76-125	2.82	30	
trans-1,4-Dichloro 2-Butene	9.62	1.00	ug/L	10.0		96.2	55-129	2.56	30	
n-Propylbenzene	10.4	0.20	ug/L	10.0		104	78-130	1.22	30	
Bromobenzene	10.3	0.20	ug/L	10.0		103	80-120	0.33	30	
Isopropyl Benzene	10.8	0.20	ug/L	10.0		108	80-128	1.35	30	
2-Chlorotoluene	10.4	0.20	ug/L	10.0		104	78-122	1.15	30	
4-Chlorotoluene	10.6	0.20	ug/L	10.0		106	80-121	0.36	30	
t-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-125	2.09	30	
1,3,5-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-129	2.46	30	
1,2,4-Trimethylbenzene	10.9	0.20	ug/L	10.0		109	80-127	1.11	30	
s-Butylbenzene	10.5	0.20	ug/L	10.0		105	78-129	1.20	30	
4-Isopropyl Toluene	10.8	0.20	ug/L	10.0		108	79-130	2.24	30	
1,3-Dichlorobenzene	10.4	0.20	ug/L	10.0		104	80-120	0.85	30	
1,4-Dichlorobenzene	9.79	0.20	ug/L	10.0		97.9	80-120	0.37	30	
n-Butylbenzene	10.2	0.20	ug/L	10.0		102	74-129	3.53	30	
1,2-Dichlorobenzene	10.0	0.20	ug/L	10.0		100	80-120	0.30	30	
1,2-Dibromo-3-chloropropane	10.4	0.50	ug/L	10.0		104	62-123	5.56	30	
1,2,4-Trichlorobenzene	10.5	0.50	ug/L	10.0		105	64-124	0.64	30	
Hexachloro-1,3-Butadiene	9.65	0.50	ug/L	10.0		96.5	58-123	2.73	30	
Naphthalene	9.92	0.50	ug/L	10.0		99.2	50-134	1.32	30	
1,2,3-Trichlorobenzene	10.5	0.50	ug/L	10.0		105	49-133	1.89	30	
Surrogate: 1,2-Dichloroethane-d4	4.94		ug/L	5.00		98.7	80-129			
Surrogate: Toluene-d8	5.00		ug/L	5.00		99.9	80-120			
Surrogate: 4-Bromofluorobenzene	5.21		ug/L	5.00		104	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	5.16		ug/L	5.00		103	80-120			



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Reported:
16-May-2018 16:32

Wet Chemistry - Quality Control

Batch BGE0063 - No Prep Wet Chem

Instrument: DX2100 Analyst: KK

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BGE0063-BLK1)					Prepared: 02-May-2018 Analyzed: 02-May-2018 17:10						
Nitrate-N	ND	0.100	0.100	mg-N/L							U
Nitrite-N	ND	0.100	0.100	mg-N/L							U
Blank (BGE0063-BLK2)					Prepared: 02-May-2018 Analyzed: 03-May-2018 15:18						
Sulfate	ND	0.100	0.100	mg/L							U
LCS (BGE0063-BS1)					Prepared: 02-May-2018 Analyzed: 02-May-2018 17:30						
Nitrate-N	1.48	0.100	0.100	mg-N/L	1.50		98.3	90-110			
Nitrite-N	1.46	0.100	0.100	mg-N/L	1.50		97.4	90-110			
LCS (BGE0063-BS2)					Prepared: 02-May-2018 Analyzed: 03-May-2018 15:38						
Sulfate	1.46	0.100	0.100	mg/L	1.50		97.6	90-110			



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Certified Analyses included in this Report

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



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16-May-2018 16:32

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



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16-May-2018 16:32

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

NWTPHg in Water

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

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	05/11/2018
CALAP	California Department of Public Health CAELAP	2748	06/30/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-011	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018



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Notes and Definitions

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