LANDAU ASSOCIATES

July 15, 2020

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

Attn: Li Ma

Transmitted via email to: *lima461@ecy.wa.gov*

Re: Status Report No. 71, April through June 2020 Activity Period
Boeing Auburn Facility
WAD 041337130, RCRA Corrective Action Agreed Order No. 01HWTRNR-3345
Auburn, Washington
Project No. 0025164.180.501

Dear Mr. Ma:

The Resource Conservation and Recovery Act (RCRA) Corrective Action Agreed Order (Auburn Agreed Order) became effective on August 14, 2002. As required under Section VI.13 of the Auburn Agreed Order, Landau Associates, Inc. (LAI) is providing Status Report No. 71 on behalf of The Boeing Company (Boeing), which covers the 3-month activity period of April through June 2020.

References

1. April 2, 2020. Report: Supplemental Feasibility Study Work Plan, Spring 2020, Boeing Auburn Facility, Auburn, Washington. Prepared by Landau Associates, Inc. (LAI) for The Boeing Company.
2. April 2, 2020. File Transfer: Historical Release Reporting Building 17-07: Completion of work at Foundations 3, 4, and 5 – Boeing-Auburn Site Wide Corrective Action. From Sarah Fees, LAI, to Li Ma, Washington State Department of Ecology (Ecology).
3. April 9, 2020. Email: RE: File Transfer: Historical Release Reporting Building 17-07: Completion of work at Foundations 3, 4, and 5 – Boeing-Auburn Site Wide Corrective Action. From Li Ma, Ecology, to Sarah Fees, LAI.
4. April 15, 2020. Letter: Status Report No. 70, January through March 2020 Activity Period, Boeing Auburn Facility, WAD 041337130, RCRA Correction Action Agreed Order No. 01HWTRNR-3345, Auburn, Washington. From Sarah Fees, LAI, to Li Ma, Ecology.
5. April 15, 2020. Email: RE: BoA Modeling Meeting Check-In. From Ben Lee, LAI, to Li Ma, Ecology.
6. April 20, 2020. Letter: Request for Variance, Continuous Multi-channel Tubing Multi-level Monitoring Well, Boeing Auburn Site, Auburn, Washington. From Sarah Fees, LAI, to Noel Philip, Ecology.

7. April 21, 2020. Email: Boeing Fabrication Auburn Site – Status Report 70, January through March 2020 Activity Period. From Li Ma, Ecology, to Representatives of City of Algona, City of Auburn, City of Pacific, Ecology, and Boeing.
8. April 21, 2020. Email: RE: CMT Well Variance Request – Boeing Auburn Site. From Noel Philip, Ecology, to Sarah Fees, LAI.
9. April 29, 2020. Project Meeting: Evaluation of Ecology Alternative D3b. Attendees: Sarah Fees, Jennifer Wynkoop, and Piper Roelen, LAI; Debbie Taege, and Katie Moxley, Boeing; Li Ma and Christa Colouzis, Ecology.
10. May 5, 2020: Email: Restoration Time Frame. From Li Ma, Ecology, to Sarah Fees, LAI.
11. May 6, 2020. Email: Boeing Auburn Fate and Transport Model Calibration. From Li Ma, Ecology, to Sarah Fees and Ben Lee, LAI, and Debbie Taege, Boeing.
12. May 7, 2020. Email: Ecology Alternative Presentation. From Sarah Fees, LAI, to Li Ma, Ecology. Attachment: FS Ecology Alternative PowerPoint slides.
13. May 7, 2020. Email: RE: Restoration Time Frame. From Sarah Fees, LAI, to Li Ma, Ecology.
14. May 11, 2020. Email: RE: Restoration Time Frame. From Li Ma, Ecology, to Sarah Fees, LAI.
15. May 21, 2020. Email: Settlement Calculations. From Sarah Fees, LAI, to Li Ma, Ecology. Attachment: Settlement estimate calculations.
16. May 26, 2020. File Transfer: Historical Release Reporting Building 17-07: Completion of work at Foundations 6, 7, and 8 – Boeing-Auburn site Wide Corrective Action. From Sarah Fees, LAI, to Li Ma, Ecology.
17. June 1, 2020. Email: BoA Transport Model Update. From Sarah Fees, LAI, to Li Ma, Ecology.
18. June 12, 2020. Email: FS Drilling Activities Status Update. From Sarah Fees, LAI, to Li Ma, Ecology.
19. June 12, 2020. Email: Transport Model Approval Request. From Sarah Fees, LAI, to Li Ma, Ecology.
20. June 12, 2020. File Transfer: Historical Release Reporting Building 17-07: Completion of work at Foundations 9, 10, 11, and 12 – Boeing-Auburn Site Wide Corrective Action. From Sarah Fees, LAI, to Li Ma, Ecology.
21. June 15, 2020. Email: RE: Transport Model Approval Request. From Li Ma, Ecology, to Sarah Fees, LAI.
22. June 15, 2020. Email: RE: Historical Release Reporting Building 17-07: Completion of work at Foundations 9, 10, 11, and 12. From Li Ma, Ecology, to Sarah Fees, LAI. (*Ecology approval for Foundations 6, 7, and 8*).
23. June 16, 2020. Email: RE: Historical Release Reporting Building 17-07: Completion of work at Foundations 9, 10, 11, and 12. From Li Ma, Ecology, to Sarah Fees, LAI.
24. June 19, 2020. Project Meeting: FS Next Steps Discussion. Attendees: Sarah Fees, LAI, Debbie Taege, Boeing, and Li Ma, Ecology.

Work Conducted

General Site-wide Corrective Action Activities

On April 15, 2020, LAI submitted Status Report No. 70 regarding first quarter 2020 activities to Ecology and other stakeholders[1] for their records (Reference #4). Ecology project manager, Li Ma, has continued to attend regularly scheduled monthly conference calls with Boeing, LAI, and the City of Algona's environmental consultant, ICF International (ICF). Boeing and Ecology communication personnel also attend these calls. The primary purpose of these calls is to provide a status update on the project schedule, reporting, and public outreach.

Groundwater Sampling

Phase 9 annual groundwater sampling took place from May 26 through June 5, 2020. The annual groundwater sampling data are provided in Attachment 1. The current monitoring well network is shown on Figure 1-1. A sampling matrix for the June 2020 annual sampling event is presented in Table 1-1. A complete summary of groundwater analytical results is presented in Tables 1-2 and 1-3.

Algona Enhanced Natural Attenuation Pilot Test

An enhanced natural attenuation pilot test was conducted in August and September 2015. Approximately 80,000 gallons of electron donor solution was injected into the shallow water-bearing zone. Boeing is performing post-injection sampling to monitor the effectiveness of the pilot test injection. Post-injection sampling was conducted quarterly through December 2017. Ongoing pilot test monitoring is completed semiannually during the June and December groundwater sampling events.

The June 2020 groundwater sampling event was the fourteenth sampling event (almost 5 years) following injection activities. A summary of results from the pilot test monitoring wells is provided in Attachment 2. The pilot test injection and monitoring well locations are presented on Figure 2-1. Pilot test data are summarized in Table 2-1.

Following injection, indications of enhanced bioremediation were observed at eight wells consisting of three regularly monitored injection wells (IW34, IW36, and IW37) and five downgradient monitoring wells (AGW240-5, AGW269, AGW270, AGW271, and AGW275). The primary indications of enhanced bioremediation consist of post-injection increases in total organic carbon (TOC) above baseline (baseline TOC concentrations were less than 10 milligrams per liter [mg/L]); evidence of more reduced aquifer redox conditions; and changes in concentrations of trichloroethene (TCE), breakdown products, and/or end products. In addition, secondary effects of enhanced bioremediation were observed at three downgradient monitoring wells post-injection (AGW240-1, AGW273, and AGW274). These secondary effects consist of increased methane concentrations and shifts in the concentrations

[1] A list of stakeholders that receive copies of the quarterly status reports are listed at the end of this document. Ecology also forwards quarterly status reports via email to representatives of the cities of Algona, Auburn, and Pacific (Reference #7).

of TCE, breakdown products, and/or end products without increases in TOC concentrations. Changes in vinyl chloride concentrations and detections of end products ethene and/or ethane have been observed at all 11 wells discussed above, with primary or secondary effects of enhanced bioremediation.

Monitoring data from second quarter 2020 indicate that treatment continues at all 11 wells that showed primary or secondary effects of enhanced bioremediation from injection activities. This is indicated by persistence of the highly reduced (methanogenic) aquifer conditions needed for complete reductive dechlorination. Additionally, two of these 11 wells show molar predominance of the non-toxic reductive dechlorination end products (ethene and ethane). Concentrations of total chlorinated volatile organic compounds (VOCs [sum of TCE, DCE, and VC]) have also decreased significantly at the 11 wells discussed above and do not show evidence of rebound through the fifth year of post-injection monitoring.

Building 17-07 Historical Release Reporting

In January 2020, Boeing encountered localized petroleum contamination in soil during construction activities inside Building 17-07. Construction activities occurred to support installation of new equipment and included removal of former mill foundations and removal of the surrounding concrete slab. Construction activities occurred between columns E5/E6 to J5/J6 in Building 17-07. Localized petroleum hydrocarbon impacted soil was identified adjacent to a number of the former mill foundations during construction activities. In accordance with the project release reporting guidelines[2], Boeing provided Ecology with written notice of a moderate release of petroleum hydrocarbons to soil in the first quarter 2020. Construction activities related to the mill foundation removal were completed on May 26, 2020. A separate technical memorandum including information about the nature and extent of contamination and soil removal will be prepared and submitted to Ecology during the third quarter 2020.

Boeing provided Ecology with periodic updates to receive concurrence on completion of contaminated soil removal and confirmation sample locations at each foundation where contaminated soil was encountered. Ecology provided approval of Foundation 2 in the first quarter 2020. The remaining foundation confirmation sampling data submittals and Ecology approval references are as follows:

- Foundations 3, 4, and 5: Boeing request on April 2, 2020 (Reference #2); Ecology approval on April 9, 2020 (Reference #3)
- Foundations 6, 7, and 8: Boeing request on May 26, 2020 (Reference #16); Ecology approval on June 15, 2020 (Reference #22)

[2] LAI. 2009. Memorandum: Boeing Auburn Facility Corrective Action Release Reporting Guidelines. To James Bet, Boeing, from Eric Weber and Jennifer Wynkoop, Landau Associates, Inc. March 5.

- Foundations 9, 10, 11, and 12: Boeing request on June 12, 2020 (Reference #20); Ecology approval on June 16, 2020 (Reference #23).

Feasibility Study Reporting

The draft feasibility study (FS) report and report appendices were submitted to Ecology in the fourth quarter 2019. Boeing and Ecology continued to discuss initial Ecology comments and next steps for potential revisions to the FS report in the second quarter 2020.

One of Ecology's initial comments on the draft FS report included a request for an additional remedial action alternative. Boeing evaluated the feasibility of this remedial action alternative and presented the evaluation to Ecology on April 29, 2020 (Reference #9). Boeing provided Ecology with a copy of the presentation slides from this meeting on May 7, 2020 (Reference #12) and backup of the calculations presented in the presentation on May 21, 2020 (Reference #15). Boeing and Ecology discussed next steps for the FS on June 19, 2020 (Reference #24). The discussion included Ecology approval of not including the additional remedial action alternative identified by Ecology. Ecology then requested evaluation of another hybrid alternative.

Boeing made updates to the numerical groundwater flow and contaminant transport models based on Ecology's initial comments on the draft FS report. Ecology provided confirmation of agreement on the flow model calibration in the first quarter 2020. LAI and Ecology have been continuing to meet regularly in the second quarter 2020 to discuss the status of the model and review changes. Boeing provided Ecology with an update on the status of the transport model revisions on April 15, 2020 (Reference #5). After additional discussions and presentation of model revisions to Ecology, Ecology approved the transport model calibration on May 6, 2020 (Reference #11). After the transport model simulations were approved, Boeing began running predictive modeling simulations to ensure evaluation of FS alternatives using the revised transport model could be completed. Based on the predictive model simulations, additional revisions needed to be made to the transport model parameters. Boeing notified Ecology of the revisions to the transport model on June 1, 2020 (Reference #17). The revised model parameters were provided to Ecology on June 12, 2020 (Reference #19). Ecology approved the revisions to the transport model on June 15, 2020 (Reference #21).

Boeing has also been making updates to individual well restoration time frame estimates based on Ecology's initial comments on the draft FS report. In the first quarter 2020, Boeing provided Ecology with the calculation and summary spreadsheets for the revised evaluation of individual well restoration time frame estimates. In the second quarter 2020, Ecology requested additional backup spreadsheets on the individual well restoration time frame calculations (Reference #10). Boeing provided this document to Ecology on May 7, 2020 (Reference #13). Ecology reviewed the restoration time frames and provided Boeing with a list of suggested revisions for TCE and VC restoration time frame analysis on May 11, 2020 (Reference #14). Additional discussions of appropriate restoration time frames for the Site are ongoing between Boeing and Ecology.

Supplemental Feasibility Study Investigation

Following submittal of the draft FS report in the fourth quarter 2019, Ecology requested supplemental FS investigation activities, including installation of one monitoring well and one soil boring east of Building 17-06, and one continuous multi-channel tubing (CMT) monitoring well in the Former Building 17-03 release area. Boeing submitted and Ecology approved a draft supplemental FS work plan outlining the details of the additional investigation activities in the first quarter 2020. The final supplemental FS investigation work plan was provided to Ecology on April 2, 2020 (Reference #1). Boeing submitted the required CMT well variance request to Ecology on April 20, 2020 (Reference #6) and Ecology approved the variance on April 21, 2020 (Reference #8).

Supplemental FS investigation activities occurred in the second quarter 2020. Drilling and well installation activities took place from June 9 to June 12, 2020. Well development took place on June 15 and 17, 2020. Boeing provided Ecology with an update on the status of supplemental FS investigation activities on June 12, 2020 (Reference #18). Initial groundwater sampling at the newly installed wells and groundwater sampling at AGW042 is scheduled to occur early in the third quarter 2020. A data submittal detailing the additional investigation work and analytical results will be prepared and submitted to Ecology in the third quarter 2020.

Communications

Ecology and Boeing are working together to ensure that all stakeholders are aware of the progress of investigation and cleanup activities at the Boeing Auburn Site. The City of Algona continues to be notified of all fieldwork occurring in Algona. The City of Algona's consultant, ICF, continues to participate in project conference calls with Boeing and Ecology and continues to review Algona-related deliverables (e.g., work plans and reports). Boeing and Ecology also continue to update the City of Auburn on activities periodically.

Building 17-06 Ongoing Monitoring

Boeing is monitoring for petroleum hydrocarbons in wells AGW128, AGW277, and AGW281 located in Building 17-06. In the first quarter 2020, Ecology approved reducing the frequency of monitoring from monthly to semiannually, in June and September. Monitoring was completed on May 29, 2020 along with the annual groundwater sampling event. Free-phase product has been periodically detected in well AGW128; the thickness during the May 2020 monitoring event was 0.29 feet. Free-phase product has not been detected in any of the other wells in building 17-06. Boeing maintains a sorbent sock in AGW128 to remove the product. The sorbent sock is replaced semiannually during monitoring.

Occurrence of Problems

During the annual groundwater sampling event, it was discovered that bentonite had broken through the concrete surface seal at AGW105R. The concrete surface seal and well monument was repaired by Holt Services, Inc. on June 12, 2020.

Projected Work for Next Reporting Period July through September 2020

Activities projected for the next reporting period pertain to FS supplemental field investigations, FS reporting, historical release reporting at Building 17-07, and ongoing stormwater/surface water monitoring. Tasks during third quarter 2020 are expected to include:

- Continuing to discuss initial Ecology comments on the draft FS report. Boeing and Ecology will have additional meetings to discuss suggested revisions to the FS report.
- Initial groundwater sampling for monitoring wells installed as part of the supplemental FS investigation.
- Preparation and submittal of a data letter to Ecology providing results of the supplemental FS investigation.
- Preparation and submittal of an historical release report to Ecology for petroleum hydrocarbon contamination discovered during construction activities in Building 17-07.
- Dry season stormwater/surface water sampling.
- Dry season LNAPL monitoring in Building 17-06.

Other Significant Findings, Changes, and Contacts

None to report.

If you have any questions regarding this status report, or need any other information, please do not hesitate to contact Boeing or LAI.

LANDAU ASSOCIATES, INC.

Sarah Fees, LG
Associate Geologist

KMG/SEF/kjg
[Y:\025\164\R\QUARTERLY PROGRESS RPTS\2020\2Q2020\2Q2020 STATUS RPT NO. 71 LETTER RPT_DRAFT.DOCX

cc: Debbie Taege (email only)
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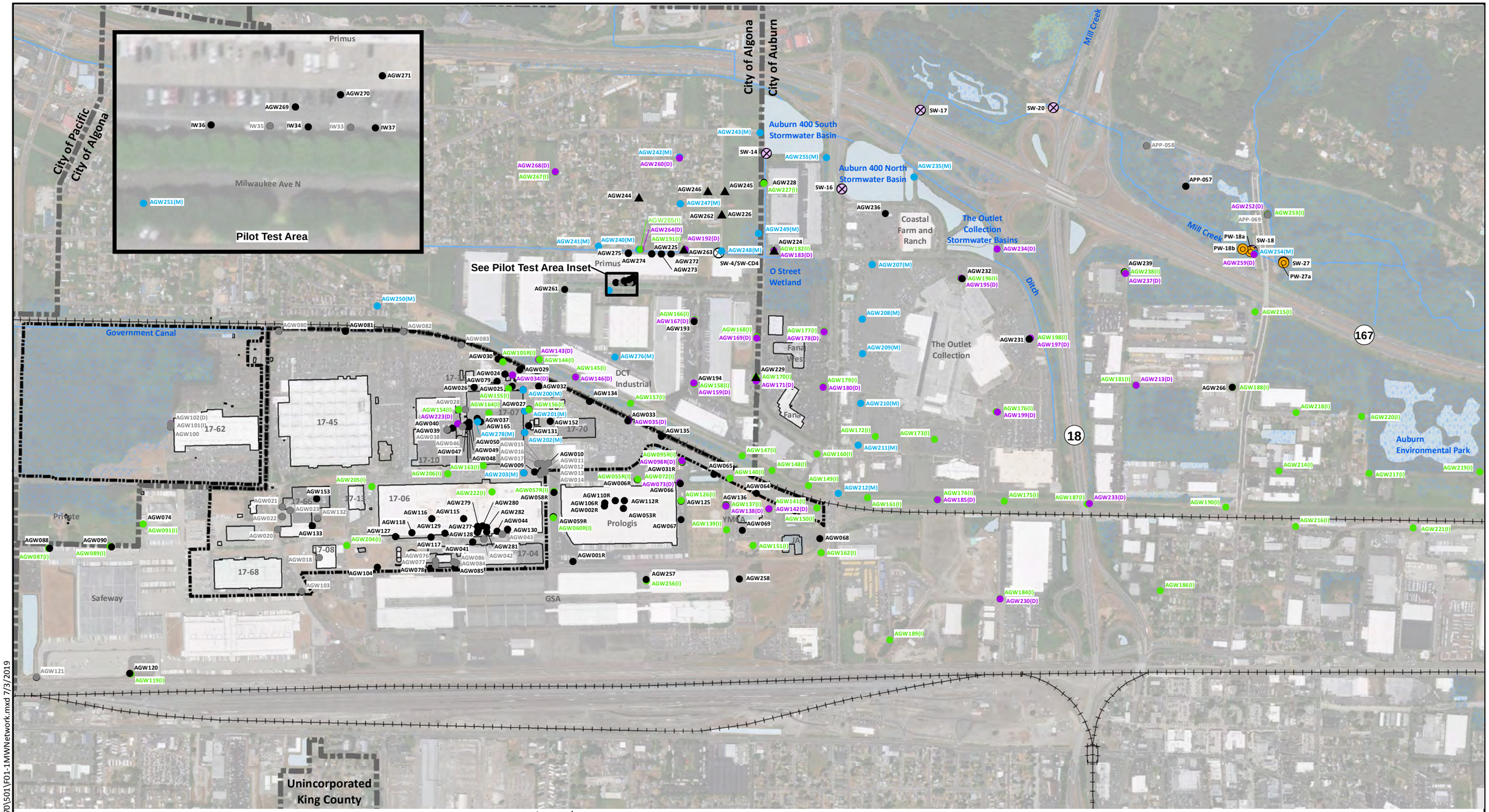
Christa Colouzis, Ecology (email only)
Janelle Anderson, Ecology (email only)

Attachments: Attachment 1: Groundwater Sampling Results
Attachment 2: Pilot Test Results
Attachment 3: Laboratory Data Packages (only included in final hard copy on DVD)

Attachment 1

Groundwater Sampling Results



Notes

1. Groundwater wells are identified by the AGW prefix. The designations behind the identifications indicate the zone. If there is no designation, the well is screened in the shallow zone. (I) = intermediate zone, (D) = deep zone, (M) = multi-level well; screens in multiple groundwater zones.
2. Well designations beginning with APP are installed and owned by WSDOT.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- Offsite Water Table Well
- Shallow Monitoring Well (2 to 30 ft bgs)
- (I) Intermediate Monitoring Well (40 to 60 ft bgs)
- (D) Deep Monitoring Well (80 to 100 ft bgs)
- (M) Multi-Level Well
- Wells Not Currently Sampled
- Annual Surface Water Sample Location
- Semiannual Surface Water Sampling Location
- Annual Pore Water Sample Location
- Wetland Areas
- Water Bodies
- Waterways

N

0 1,000 2,000

Scale in Feet

Base Map Source: Geometrix 2003; Parcel Data Source: King County 2015; Aerial Photo Source: Esri World Imagery.

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Boeing Auburn Auburn, Washington	**Current Monitoring Well Network**	Figure 1-1

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Table 1-1
2Q2020 Groundwater Sampling Matrix
Boeing Auburn Facility
Auburn, Washington

Sample Location	Field Sample ID:	Sample Date:	Sample Type:	Laboratory SDG:	Laboratory Sample ID:	Select VOCs by SW-846 8260C-SIM (a)	BTEX by SW-846 8260C	TPH-G by NWTPH-Gx	TPH-D by NWTPH-Dx	MEE by RSK-175	TOC by SM 5310C	Sulfate by EPA 300.0	Diss. Metals by SW-846 6020A	Total Cyanide by ASTM D7511 (b)	Free Cyanide by ASTM D7237 (b)
AGW001R	AGW001R-20200602	PDN	20F0069	20F0069-08	X										
AGW002R	AGW002R-20200602	N	20F0073	20F0073-10	X				X	X	X				
AGW006R	AGW006R-20200602	PDN	20F0073	20F0073-05	X										
AGW009	AGW009-20200527	PDN	20E0337	20E0337-07	X										
AGW010	AGW010-20200527	N	20E0307	20E0307-02	X	X	X	X							
AGW010	AGW900-20200527	FD	20E0307	20E0307-03	X	X	X	X							
AGW024	AGW024-20200527	PDN	20E0337	20E0337-04	X										
AGW025	AGW025-20200527	PDN	20E0337	20E0337-13	X										
AGW026	AGW026-20200527	PDN	20E0337	20E0337-14	X										
AGW027	AGW027-20200527	PDN	20E0337	20E0337-10	X										
AGW029	AGW029-20200526	PDN	20E0309	20E0309-16	X										
AGW030	AGW030-20200526	PDN	20E0309	20E0309-18	X										
AGW031R	AGW031R-20200526	PDN	20E0309	20E0309-21	X										
AGW032	AGW032-20200601	PDN	20F0046	20F0046-12	X										
AGW033	AGW033-20200526	PDN	20E0309	20E0309-13	X										
AGW034	AGW034-20200527	PDN	20E0337	20E0337-02	X										
AGW035	AGW035-20200526	PDN	20E0309	20E0309-14	X										
AGW037	AGW037-20200604	PDN	20F0122	20F0122-04	X										
AGW039	AGW039-20200603	N	20F0086	20F0086-11	X							X			
AGW040	AGW040-20200603	PDN	20F0086	20F0086-10	X										X
AGW041	AGW041-20200529	PDN	20E0349	20E0349-09	X										
AGW044	AGW044-20200528	N	20E0340	20E0340-07	X			X							X
AGW047	AGW047-NAOH-20200601	N	A0F0038	A0F0038-01										X	
AGW048	AGW048-20200601	N	20F0046	20F0046-14								X			
AGW048	AGW048-NAOH-20200601	N	A0F0038	A0F0038-03										X	
AGW049	AGW049-20200601	N	20F0046	20F0046-15								X			
AGW049	AGW049-NAOH-20200601	N	A0F0038	A0F0038-05										X	
AGW050	AGW050-20200601	N	20F0046	20F0046-16								X			
AGW050	AGW901-20200601	FD	20F0046	20F0046-17								X			
AGW050	AGW050-NAOH-20200601	N	A0F0038	A0F0038-07									X	X	
AGW050	AGW901-NAOH-20200601	FD	A0F0038	A0F0038-11									X	X	
AGW050	AGW050-UNPRES-20200601	N	A0F0038	A0F0038-08								X	X	X	
AGW050	AGW901-UNPRES-20200601	FD	A0F0038	A0F0038-12									X	X	
AGW053R	AGW053R-20200602	PDN	20F0073	20F0073-08	X										
AGW055R	AGW055R-20200602	PDN	20F0069	20F0069-05	X										
AGW057R	AGW057R-20200602	PDN	20F0069	20F0069-06	X										
AGW058R	AGW058R-20200602	PDN	20F0069	20F0069-07	X										
AGW059R	AGW059R-20200602	PDN	20F0073	20F0073-06	X										
AGW060R	AGW060R-20200602	PDN	20F0073	20F0073-07	X										
AGW064	AGW064-20200526	PDN	20E0309	20E0309-04	X										
AGW065	AGW065-20200604	PDN	20F0122	20F0122-07	X										
AGW066	AGW066-20200602	PDN	20F0073	20F0073-04	X										
AGW067	AGW067-20200602	PDN	20F0069	20F0069-01	X										
AGW068	AGW068-20200527	PDN	20E0333	20E0333-14	X										
AGW069	AGW069-20200526	PDN	20E0309	20E0309-06	X										
AGW072	AGW072-20200602	PDN	20F0069	20F0069-12	X										
AGW073	AGW073-20200602	PDN	20F0073	20F0073-03	X										

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2Q2020 Groundwater Sampling Matrix
Boeing Auburn Facility
Auburn, Washington

Sample Location	Field Sample ID:	Sample Date:	Sample Type:	Laboratory SDG:	Laboratory Sample ID:	Select VOCs by SW-846 8260C-SIM (a)	BTEX by SW-846 8260C	TPH-G by NWTPH-Gx	TPH-D by NWTPH-Dx	MEE by RSK-175	TOC by SM 5310C	Sulfate by EPA 300.0	Diss. Metals by SW-846 6020A	Total Cyanide by ASTM D7511 (b)	Free Cyanide by ASTM D7237 (b)
AGW074	AGW074-20200603	PDN	20F0086	20F0086-04	X										
AGW078	AGW078-20200529	PDN	20E0349	20E0349-12	X										
AGW079	AGW079-20200527	PDN	20E0337	20E0337-03	X										
AGW081	AGW081-20200526	PDN	20E0309	20E0309-22	X										
AGW085	AGW085-20200529	PDN	20E0349	20E0349-11	X										
AGW087	AGW087-20200603	PDN	20F0086	20F0086-08	X										
AGW088	AGW088-20200603	PDN	20F0086	20F0086-09	X										
AGW089	AGW089-20200603	PDN	20F0086	20F0086-06	X										
AGW090	AGW090-20200603	PDN	20F0086	20F0086-07	X										
AGW091	AGW091-20200603	PDN	20F0086	20F0086-05	X										
AGW095R	AGW095R-20200526	PDN	20E0309	20E0309-19	X										
AGW098R	AGW098R-20200526	PDN	20E0309	20E0309-20	X										
AGW104	AGW104-20200529	PDN	20E0349	20E0349-13	X										
AGW105R	AGW105R-20200526	PDN	20E0309	20E0309-17	X										
AGW106R	AGW106R-20200602	N	20F0069	20F0069-10	X				X	X	X				
AGW106R	AGW902-20200602	FD	20F0069	20F0069-11	X				X	X	X				
AGW110R	AGW110R-20200602	N	20F0069	20F0069-09	X				X	X	X				
AGW112R	AGW112R-20200602	PDN	20F0073	20F0073-09	X										
AGW115	AGW115-20200529	PDN	20E0349	20E0349-05	X										
AGW116	AGW116-20200529	PDN	20E0349	20E0349-06	X										
AGW117	AGW117-20200603	PDN	20F0086	20F0086-12	X										
AGW118	AGW118-20200529	PDN	20E0349	20E0349-07	X										
AGW119	AGW119-20200603	PDN	20F0086	20F0086-02	X										
AGW120	AGW120-20200603	PDN	20F0086	20F0086-03	X										
AGW125	AGW125-20200602	PDN	20F0069	20F0069-02	X										
AGW125	AGW903-20200602	PDFD	20F0069	20F0069-03	X										
AGW126	AGW126-20200602	N	20F0073	20F0073-02	X										
AGW127	AGW127-20200603	PDN	20F0086	20F0086-13	X										
AGW128	AGW128-20200529	N	20E0349	20E0349-03	X			X							
AGW129	AGW129-20200529	PDN	20E0349	20E0349-08	X										
AGW130	AGW130-20200528	N	20E0340	20E0340-08	X			X							
AGW131	AGW131-20200527	PDN	20E0337	20E0337-06	X										
AGW133	AGW133-20200603	PDN	20F0086	20F0086-15	X										
AGW134	AGW134-20200526	PDN	20E0309	20E0309-15	X										
AGW135	AGW135-20200526	PDN	20E0309	20E0309-12	X										
AGW136	AGW136-20200526	PDN	20E0309	20E0309-07	X										
AGW137	AGW137-20200526	PDN	20E0309	20E0309-08	X										
AGW138	AGW138-20200526	PDN	20E0309	20E0309-09	X										
AGW139	AGW139-20200526	PDN	20E0309	20E0309-11	X										
AGW140	AGW140-20200526	PDN	20E0309	20E0309-10	X										
AGW141	AGW141-20200526	PDN	20E0309	20E0309-02	X										
AGW142	AGW142-20200526	PDN	20E0309	20E0309-03	X										
AGW143	AGW143-20200601	PDN	20F0047	20F0047-11	X										
AGW144	AGW144-20200601	PDN	20F0047	20F0047-12	X										
AGW145	AGW145-20200601	PDN	20F0047	20F0047-09	X										
AGW146	AGW146-20200601	PDN	20F0047	20F0047-10	X										
AGW147	AGW147-20200601	PDN	20F0047	20F0047-07	X										

Table 1-1
2Q2020 Groundwater Sampling Matrix
Boeing Auburn Facility
Auburn, Washington

Sample Location	Field Sample ID:	Sample Date:	Sample Type:	Laboratory SDG:	Laboratory Sample ID:	Select VOCs by SW-846 8260C-SIM (a)	BTEX by SW-846 8260C	TPH-G by NWTPH-Gx	TPH-D by NWTPH-Dx	MEE by RSK-175	TOC by SM 5310C	Sulfate by EPA 300.0	Diss. Metals by SW-846 6020A	Total Cyanide by ASTM D7511 (b)	Free Cyanide by ASTM D7237 (b)
AGW148	AGW148-20200601	PDN	20F0047	20F0047-06	X										
AGW149	AGW149-20200601	PDN	20F0047	20F0047-05	X										
AGW150	AGW150-20200529	PDN	20E0350	20E0350-10	X										
AGW151	AGW151-20200526	PDN	20E0309	20E0309-05	X										
AGW152	AGW152-20200527	PDN	20E0337	20E0337-05	X										
AGW153	AGW153-20200603	PDN	20F0086	20F0086-16	X										
AGW154	AGW154-20200528	PDN	20E0340	20E0340-10	X										
AGW155	AGW155-20200527	PDN	20E0337	20E0337-12	X										
AGW156	AGW156-20200527	PDN	20E0337	20E0337-11	X										
AGW157	AGW157-20200601	PDN	20F0047	20F0047-08	X										
AGW158	AGW158-20200603	PDN	20F0104	20F0104-06	X										
AGW159	AGW159-20200603	PDN	20F0104	20F0104-07	X										
AGW160	AGW160-20200601	PDN	20F0046	20F0046-03	X										
AGW161	AGW161-20200527	PDN	20E0333	20E0333-08	X										
AGW162	AGW162-20200527	PDN	20E0333	20E0333-15	X										
AGW163	AGW163-20200527	PDN	20E0337	20E0337-08	X										
AGW164	AGW164-20200604	PDN	20F0122	20F0122-06	X										
AGW165	AGW165-20200604	PDN	20F0122	20F0122-05	X										
AGW166	AGW166-20200527	PDN	20E0317	20E0317-06	X										
AGW167	AGW167-20200527	PDN	20E0317	20E0317-07	X										
AGW168	AGW168-20200604	PDN	20F0120	20F0120-07	X										
AGW169	AGW169-20200604	PDN	20F0120	20F0120-08	X										
AGW170	AGW170-20200604	PDN	20F0120	20F0120-05	X										
AGW171	AGW171-20200604	PDN	20F0120	20F0120-06	X										
AGW172	AGW172-20200601	PDN	20F0046	20F0046-02	X										
AGW173	AGW173-20200526	PDN	20E0308	20E0308-06	X										
AGW174	AGW174-20200527	PDN	20E0333	20E0333-06	X										
AGW175	AGW175-20200527	N	20E0333	20E0333-05	X										
AGW176	AGW176-20200526	PDN	20E0308	20E0308-08	X										
AGW177	AGW177-20200601	PDN	20F0046	20F0046-04	X										
AGW178	AGW178-20200601	PDN	20F0046	20F0046-05	X										
AGW179	AGW179-20200529	PDN	20E0350	20E0350-11	X										
AGW179	AGW904-20200529	PDFD	20E0350	20E0350-12	X										
AGW180	AGW180-20200529	PDN	20E0350	20E0350-13	X										
AGW181	AGW181-20200601	PDN	20F0046	20F0046-07	X										
AGW182	AGW182-20200604	PDN	20F0121	20F0121-08	X										
AGW183	AGW183-20200604	PDN	20F0121	20F0121-09	X										
AGW184	AGW184-20200527	PDN	20E0333	20E0333-12	X										
AGW185	AGW185-20200527	PDN	20E0333	20E0333-07	X										
AGW186	AGW186-20200603	PDN	20F0085	20F0085-02	X										
AGW187	AGW187-20200527	PDN	20E0333	20E0333-04	X										
AGW188	AGW188-20200602	N	20F0072	20F0072-13	X										
AGW189	AGW189-20200601	PDN	20F0046	20F0046-06	X										
AGW190	AGW190-20200527	PDN	20E0333	20E0333-02	X										
AGW191	AGW191-20200529	PDN	20E0351	20E0351-09	X										
AGW192	AGW192-20200529	PDN	20E0351	20E0351-10	X										
AGW193	AGW193-20200527	PDN	20E0317	20E0317-08	X										

Table 1-1
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Boeing Auburn Facility
Auburn, Washington

Sample Location	Field Sample ID:	Sample Date:	Sample Type:	Laboratory SDG:	Laboratory Sample ID:	Select VOCs by SW-846 8260C-SIM (a)	BTEX by SW-846 8260C	TPH-G by NWTPH-Gx	TPH-D by NWTPH-Dx	MEE by RSK-175	TOC by SM 5310C	Sulfate by EPA 300.0	Diss. Metals by SW-846 6020A	Total Cyanide by ASTM D7511 (b)	Free Cyanide by ASTM D7237 (b)
AGW194	AGW194-20200603	PDN	20F0104	20F0104-05	X										
AGW195	AGW195-20200526	PDN	20E0308	20E0308-03	X										
AGW196	AGW196-20200526	PDN	20E0308	20E0308-04	X										
AGW197	AGW197-20200603	PDN	20F0085	20F0085-12	X										
AGW198	AGW198-20200603	PDN	20F0085	20F0085-13	X										
AGW199	AGW199-20200526	PDN	20E0308	20E0308-07	X										
AGW200-2	AGW200-2-30-20200604	N	20F0123	20F0123-02	X										
AGW200-2	AGW905-20200604	FD	20F0123	20F0123-03	X										
AGW200-5	AGW200-5-60-20200604	N	20F0123	20F0123-04	X										
AGW200-6	AGW200-6-80-20200604	N	20F0123	20F0123-05	X										
AGW201-2	AGW201-2-30-20200604	N	20F0123	20F0123-06	X										
AGW201-5	AGW201-5-60-20200604	N	20F0123	20F0123-07	X										
AGW201-6	AGW201-6-80-20200604	N	20F0123	20F0123-08	X										
AGW202-2	AGW202-2-30-20200604	N	20F0123	20F0123-09	X										
AGW202-4	AGW202-4-51-20200604	N	20F0123	20F0123-10	X										
AGW202-6	AGW202-6-81-20200604	N	20F0122	20F0122-12	X										
AGW203-2	AGW203-2-30-20200604	N	20F0122	20F0122-08	X										
AGW203-4	AGW203-4-49-20200604	N	20F0122	20F0122-09	X										
AGW203-4	AGW906-20200604	FD	20F0122	20F0122-10	X										
AGW203-6	AGW203-6-80-20200604	N	20F0122	20F0122-11	X										
AGW204	AGW204-20200603	PDN	20F0086	20F0086-14	X										
AGW205	AGW205-20200529	PDN	20E0349	20E0349-10	X										
AGW206	AGW206-20200527	PDN	20E0337	20E0337-09	X										
AGW207-2	AGW207-2-30-20200603	N	20F0085	20F0085-10	X										
AGW207-4	AGW207-4-49-20200603	N	20F0085	20F0085-09	X										
AGW207-7	AGW207-7-80-20200603	N	20F0085	20F0085-11	X										
AGW208-2	AGW208-2-29-20200603	N	20F0085	20F0085-06	X										
AGW208-4	AGW208-4-49-20200603	N	20F0085	20F0085-07	X										
AGW208-6	AGW208-6-80-20200603	N	20F0085	20F0085-08	X										
AGW209-2	AGW209-2-30-20200603	N	20F0085	20F0085-03	X										
AGW209-5	AGW209-5-60-20200603	N	20F0085	20F0085-04	X										
AGW209-6	AGW209-6-80-20200603	N	20F0085	20F0085-05	X										
AGW210-2	AGW210-2-30-20200602	N	20F0072	20F0072-06	X										
AGW210-5	AGW210-5-60-20200602	N	20F0072	20F0072-07	X										
AGW210-6	AGW210-6-80-20200602	N	20F0072	20F0072-08	X										
AGW211-2	AGW211-2-30-20200602	N	20F0072	20F0072-02	X										
AGW211-5	AGW211-5-60-20200602	N	20F0072	20F0072-03	X										
AGW211-6	AGW211-6-80-20200602	N	20F0072	20F0072-04	X										
AGW211-6	AGW907-20200602	FD	20F0072	20F0072-05	X										
AGW212-2	AGW212-2-30-20200527	N	20E0333	20E0333-10	X										
AGW212-5	AGW212-5-60-20200527	N	20E0333	20E0333-09	X										
AGW212-7	AGW212-7-100-20200527	N	20E0333	20E0333-11	X										
AGW213	AGW213-20200601	PDN	20F0046	20F0046-08	X										
AGW214	AGW214-20200602	N	20F0072	20F0072-15	X										
AGW215	AGW215-20200604	N	20F0121	20F0121-02	X										
AGW215	AGW908-20200604	FD	20F0121	20F0121-03	X										
AGW216	AGW216-20200527	N	20E0333	20E0333-01	X										

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Sample Location	Field Sample ID:	Sample Date:	Sample Type:	Laboratory SDG:	Laboratory Sample ID:	Select VOCs by SW-846 8260C-SIM (a)	BTEX by SW-846 8260C	TPH-G by NWTPH-Gx	TPH-D by NWTPH-Dx	MEE by RSK-175	TOC by SM 5310C	Sulfate by EPA 300.0	Diss. Metals by SW-846 6020A	Total Cyanide by ASTM D7511 (b)	Free Cyanide by ASTM D7237 (b)
AGW217	AGW217-20200529	N	20E0350	20E0350-07	X										
AGW218	AGW218-20200602	N	20F0072	20F0072-14	X										
AGW219	AGW219-20200528	PDN	20E0348	20E0348-12	X										
AGW220	AGW220-20200529	N	20E0350	20E0350-06	X										
AGW221	AGW221-20200529	N	20E0350	20E0350-08	X										
AGW221	AGW909-20200529	FD	20E0350	20E0350-09	X										
AGW222	AGW222-20200529	PDN	20E0349	20E0349-04	X										
AGW223	AGW223-20200528	PDN	20E0340	20E0340-09	X										
AGW224	AGW224-20200604	PDN	20F0121	20F0121-10	X										
AGW225	AGW225-20200529	N	20E0351	20E0351-12	X				X	X	X				
AGW226	AGW226-20200604	N	20F0121	20F0121-04	X				X	X	X				
AGW227	AGW227-20200604	PDN	20F0120	20F0120-10	X										
AGW228	AGW228-20200604	N	20F0120	20F0120-09	X										
AGW229	AGW229-20200604	PDN	20F0120	20F0120-04	X										
AGW230	AGW230-20200527	PDN	20E0333	20E0333-13	X										
AGW231	AGW231-20200603	PDN	20F0085	20F0085-14	X										
AGW232	AGW232-20200526	PDN	20E0308	20E0308-05	X										
AGW233	AGW233-20200527	PDN	20E0333	20E0333-03	X										
AGW234	AGW234-20200528	PDN	20E0348	20E0348-08	X										
AGW235-2	AGW235-2-19-20200528	N	20E0348	20E0348-05	X										
AGW235-4	AGW235-4-39-20200528	N	20E0348	20E0348-06	X										
AGW235-7	AGW235-7-71-20200528	N	20E0348	20E0348-07	X										
AGW236	AGW236-20200526	N	20E0308	20E0308-02	X										
AGW237	AGW237-20200601	PDN	20F0046	20F0046-10	X										
AGW238	AGW238-20200601	PDN	20F0046	20F0046-11	X										
AGW239	AGW239-20200604	N	20F0121	20F0121-01	X										
AGW240-1	AGW240-1-7-20200601	N	20F0047	20F0047-01	X				X	X	X				
AGW240-5	AGW240-5-28-20200601	N	20F0047	20F0047-02	X				X	X	X				
AGW241-1	AGW241-1-6-20200528	N	20E0347	20E0347-06	X										
AGW241-5	AGW241-5-27-20200528	N	20E0347	20E0347-07	X										
AGW241-5	AGW910-20200528	FD	20E0347	20E0347-08	X										
AGW242-1	AGW242-1-6-20200529	N	20E0351	20E0351-05	X										
AGW242-2	AGW242-2-16-20200529	N	20E0351	20E0351-04	X										
AGW242-5	AGW242-5-60-20200529	N	20E0351	20E0351-03	X										
AGW243-1	AGW243-1-6-20200601	N	20F0047	20F0047-13	X										
AGW243-3	AGW243-3-25-20200601	N	20F0047	20F0047-14	X										
AGW243-5	AGW243-5-50-20200601	N	20F0047	20F0047-15	X										
AGW244	AGW244-20200604	N	20F0120	20F0120-03	X				X	X	X				
AGW245	AGW245-20200604	PDN	20F0121	20F0121-06	X										
AGW246	AGW246-20200604	PDN	20F0121	20F0121-07	X										
AGW247-1	AGW247-1-6-20200528	N	20E0347	20E0347-09	X				X	X	X				
AGW247-5	AGW247-5-27-20200529	N	20E0351	20E0351-02	X				X	X	X				
AGW248-1	AGW248-1-5-20200601	N	20F0047	20F0047-04	X										
AGW248-5	AGW248-5-26-20200601	N	20F0047	20F0047-03	X										
AGW249-1	AGW249-1-8-20200601	N	20F0047	20F0047-17	X										
AGW249-5	AGW249-5-29-20200601	N	20F0047	20F0047-16	X										
AGW249-5	AGW911-20200601	FD	20F0047	20F0047-18	X										

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2Q2020 Groundwater Sampling Matrix
Boeing Auburn Facility
Auburn, Washington

Sample Location	Field Sample ID:	Sample Date:	Sample Type:	Laboratory SDG:	Laboratory Sample ID:	Select VOCs by SW-846 8260C-SIM (a)	BTEX by SW-846 8260C	TPH-G by NWTPH-Gx	TPH-D by NWTPH-Dx	MEE by RSK-175	TOC by SM 5310C	Sulfate by EPA 300.0	Diss. Metals by SW-846 6020A	Total Cyanide by ASTM D7511 (b)	Free Cyanide by ASTM D7237 (b)
AGW250-1	AGW250-1-9-20200602	N	20F0072	20F0072-09	X										
AGW250-2	AGW250-2-26-20200602	N	20F0072	20F0072-10	X										
AGW250-3	AGW250-3-41-20200602	N	20F0072	20F0072-11	X										
AGW250-6	AGW250-6-81-20200602	N	20F0072	20F0072-12	X										
AGW251-1	AGW251-1-8-20200603	N	20F0104/ 20F0111/ 20F0120	20F0104-01/ 20F0111-01/ 20F0120-02	X				X	X	X				
AGW251-2	AGW251-2-25-20200603	N	20F0104	20F0104-02	X				X	X	X				
AGW251-3	AGW251-3-40-20200603	N	20F0104	20F0104-03	X				X	X	X				
AGW251-6	AGW251-6-76-20200603	N	20F0104	20F0104-04	X										
AGW252	AGW252-20200528	PDN	20E0348	20E0348-11	X										
AGW253	AGW253-20200528	PDN	20E0348	20E0348-10	X										
AGW254-1	AGW254-1-6-20200529	N	20E0350	20E0350-02	X										
AGW254-2	AGW254-2-20-20200529	N	20E0350	20E0350-03	X										X
AGW254-5	AGW254-5-50-20200529	N	20E0350	20E0350-04	X										
AGW255-1	AGW255-1-13-20200528	N	20E0348	20E0348-03	X										
AGW255-3	AGW255-3-30-20200528	N	20E0348	20E0348-02	X										
AGW255-5	AGW255-5-55-20200528	N	20E0348	20E0348-04	X										
AGW256	AGW256-20200528	PDN	20E0340	20E0340-03	X										
AGW257	AGW257-20200528	PDN	20E0340	20E0340-04	X										
AGW258	AGW258-20200528	PDN	20E0340	20E0340-02	X										
AGW259	AGW259-20200529	PDN	20E0350	20E0350-05	X										
AGW260	AGW260-20200529	PDN	20E0351	20E0351-06	X										
AGW261	AGW261-20200527	PDN	20E0317	20E0317-09	X										
AGW262	AGW262-20200604	PDN	20F0121	20F0121-05	X										
AGW263	AGW263-20200529	PDN	20E0351	20E0351-11	X										
AGW264	AGW264-20200529	PDN	20E0351	20E0351-07	X										
AGW265	AGW265-20200529	PDN	20E0351	20E0351-08	X										
AGW266	AGW266-20200601	PDN	20F0046	20F0046-09	X										
AGW267	AGW267-20200604	PDN	20F0120	20F0120-11	X										
AGW268	AGW268-20200604	PDN	20F0121	20F0121-11	X										
AGW269	AGW269-20200526	N	20E0305	20E0305-03	X				X	X	X				
AGW270	AGW270-20200527	N	20E0317	20E0317-05	X				X	X	X				
AGW271	AGW271-20200526	N	20E0305	20E0305-07	X				X	X	X				
AGW271	AGW912-20200526	FD	20E0305	20E0305-06	X				X	X	X				
AGW272	AGW272-20200527	N	20E0317	20E0317-02	X				X	X	X				
AGW273	AGW273-20200527	N	20E0317	20E0317-04	X				X	X	X				
AGW274	AGW274-20200527	N	20E0317	20E0317-03	X				X	X	X				
AGW275	AGW275-20200526	N	20E0305	20E0305-08	X				X	X	X				
AGW276-2	AGW276-2-25-20200528	N	20E0347	20E0347-05	X										
AGW276-5	AGW276-5-60-20200528	N	20E0347	20E0347-03	X										
AGW276-5	AGW913-20200528	FD	20E0347	20E0347-04	X										
AGW276-6	AGW276-6-80-20200528	N	20E0347	20E0347-01	X										
AGW277	AGW277-20200529	N	20E0349	20E0349-02				X							
AGW278-1	AGW278-1-17-20200601	N	20F0046	20F0046-18	X										
AGW278-1	AGW278-1-17-NAOH-20200601	N	A0F0038	A0F0038-09									X	X	
AGW278-1	AGW278-1-17-UNPRES-20200601	N	A0F0038	A0F0038-10										X	

Table 1-1
2Q2020 Groundwater Sampling Matrix
Boeing Auburn Facility
Auburn, Washington

Sample Location	Field Sample ID:	Sample Date:	Sample Type:	Laboratory SDG:	Laboratory Sample ID:	Select VOCs by SW-846 8260C-SIM (a)	BTEX by SW-846 8260C	TPH-G by NWTPH-Gx	TPH-D by NWTPH-Dx	MEE by RSK-175	TOC by SM 5310C	Sulfate by EPA 300.0	Diss. Metals by SW-846 6020A	Total Cyanide by ASTM D7511 (b)	Free Cyanide by ASTM D7237 (b)
AGW278-2	AGW278-2-25-20200601	N	20F0046	20F0046-13	X										
AGW278-4	AGW278-4-45-20200604	N	20F0122	20F0122-02	X										
AGW278-6	AGW278-6-80-20200604	N	20F0122	20F0122-03	X										
AGW281	AGW281-20200528	N	20E0340	20E0340-06				X							
AGW282	AGW282-20200528	N	20E0340	20E0340-05				X							
APP-057	APP057-20200528	N	20E0348	20E0348-09	X										
IW34	IW34-20200526	N	20E0305	20E0305-04	X				X	X	X				
IW36	IW36-20200526	N	20E0305	20E0305-02	X				X	X	X				
IW37	IW37-20200526	N	20E0305	20E0305-05	X				X	X	X				

Notes:

(a) Select VOCs consist of 1,1-dichloroethene, cis-1,2-dichloroethene, tetrachloroethene, trans-1,2-dichloroethene, trichloroethene, and vinyl chloride.

(b) Samples were analyzed for cyanide by Apex Laboratories; all other analytical methods were performed by TestAmerica.

Abbreviations/Acronyms:

EPA = US Environmental Protection Agency
FD = field duplicate
N = primary sample
SDG = sample delivery group
NWTPH = Northwest Total Petroleum Hydrocarbon
VOC = volatile organic compound

Table 1-2
2Q2020 Semiannual Groundwater Sampling Analytical Results
Volatile Organic Compounds, General Chemistry, and Dissolved Gases
Boeing Auburn Facility
Auburn, Washington

Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
					1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW001R	On-Shallow	20F0069	6/2/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**1.37**	0.0200 U	--	--	--	--	--
AGW002R	On-Shallow	20F0073	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0271**	**2.49**	**1.89**	0.39 U	0.24 U	**1460**
AGW006R	Shallow	20F0073	6/2/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW009	Shallow-WT	20E0337	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW010	Shallow-WT	20E0307	5/27/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 UJ	--	--	--	--	--
AGW010	Shallow-WT	20E0307	5/27/2020	FD	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW024	Shallow	20E0337	5/27/2020	PDN	0.200 U	**1.38**	0.200 U	0.200 U	0.200 U	**0.628**	--	--	--	--	--
AGW025	Shallow	20E0337	5/27/2020	PDN	0.200 U	**2.53**	0.200 U	**0.248**	0.200 U	**1.48**	--	--	--	--	--
AGW026	Shallow	20E0337	5/27/2020	PDN	0.200 U	**0.483**	0.200 U	0.200 U	**0.490**	0.0200 U	--	--	--	--	--
AGW027	Shallow-WT	20E0337	5/27/2020	PDN	0.200 U	**0.353**	0.200 U	0.200 U	0.200 U	**0.0953**	--	--	--	--	--
AGW029	Shallow	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW030	Shallow	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW031R	Shallow	20E0309	5/26/2020	PDN	0.200 U	**0.950**	0.200 U	0.200 U	**0.708**	0.0200 U	--	--	--	--	--
AGW032	Shallow-WT	20F0046	6/1/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0690**	--	--	--	--	--
AGW033	Shallow-WT	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW034	Deep	20E0337	5/27/2020	PDN	0.200 U	**0.280**	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW035	Deep	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**1.86**	0.0200 U	--	--	--	--	--
AGW037	Shallow-WT	20F0122	6/4/2020	PDN	0.200 U	**0.864**	0.200 U	0.200 U	**1.76**	**0.101**	--	--	--	--	--
AGW039	Shallow-WT	20F0086	6/3/2020	N	0.200 U	**0.829**	0.200 U	0.200 U	**0.344**	**0.0232**	--	--	--	--	--
AGW040	Shallow-WT	20F0086	6/3/2020	PDN	0.200 U	**0.400**	0.200 U	0.200 U	**0.598**	**0.0221**	--	--	--	--	--
AGW041	Shallow-WT	20E0349	5/29/2020	PDN	0.200 U	0.200 U	**0.215**	0.200 U	**0.226**	0.0200 U	--	--	--	--	--
AGW044	Shallow-WT	20E0340	5/28/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW047	Shallow	A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	--	--
AGW048	Shallow	20F0046/A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	--	--
AGW049	Shallow	20F0046/A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	--	--
AGW050	Shallow	20F0046/A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	--	--
AGW050	Shallow	20F0046/A0F0038	6/1/2020	FD	--	--	--	--	--	--	--	--	--	--	--
AGW053R	Shallow-WT	20F0073	6/2/2020	PDN	0.200 U	**0.344**	0.200 U	0.200 U	**0.956**	0.0200 U	--	--	--	--	--
AGW055R	Intermediate	20F0069	6/2/2020	PDN	0.200 U	**0.792**	0.200 U	0.200 U	**0.412**	**0.0958**	--	--	--	--	--
AGW057R	Intermediate	20F0069	6/2/2020	PDN	0.200 U	0.200 U	**0.426**	0.200 U	**0.921**	0.0200 U	--	--	--	--	--
AGW058R	Shallow-WT	20F0069	6/2/2020	PDN	0.200 U	0.200 U	**0.320**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW059R	Shallow-WT	20F0073	6/2/2020	PDN	0.200 U	0.200 U	**0.265**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW060R	Intermediate	20F0073	6/2/2020	PDN	0.200 U	**2.25**	0.200 U	0.200 U	**0.545**	**0.0506**	--	--	--	--	--
AGW064	Shallow-WT	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW065	Shallow-WT	20F0122	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW066	Shallow-WT	20F0073	6/2/2020	PDN	0.200 U	**2.36**	0.200 U	0.200 U	**2.56**	**0.0251**	--	--	--	--	--
AGW067	Shallow-WT	20F0069	6/2/2020	PDN	0.200 U	**1.98**	0.200 U	0.200 U	**3.30**	0.0200 U	--	--	--	--	--

Table 1-2
2Q2020 Semiannual Groundwater Sampling Analytical Results
Volatile Organic Compounds, General Chemistry, and Dissolved Gases
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Auburn, Washington

					Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW068	Shallow-WT	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW069	Shallow-WT	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW072	Intermediate	20F0069	6/2/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.877**	0.0200 U	--	--	--	--	--
AGW073	Deep	20F0073	6/2/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW074	Shallow-WT	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW078	Shallow-WT	20E0349	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW079	Shallow-WT	20E0337	5/27/2020	PDN	0.200 U	**0.246**	0.200 U	0.200 U	0.200 U	**0.551**	--	--	--	--	--
AGW081	Shallow-WT	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW085	Shallow-WT	20E0349	5/29/2020	PDN	0.200 U	0.200 U	**0.203**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW087	Intermediate	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW088	Shallow	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW089	Intermediate	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW090	Shallow	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW091	Intermediate	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW095R	Intermediate	20E0309	5/26/2020	PDN	0.200 U	**0.243**	0.200 U	0.200 U	**1.25**	0.0200 U	--	--	--	--	--
AGW098R	Deep	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.337**	0.0200 U	--	--	--	--	--
AGW104	Shallow	20E0349	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW105R	Intermediate	20E0309	5/26/2020	PDN	0.200 U	**0.541**	0.200 U	0.200 U	**0.768**	**0.404**	--	--	--	--	--
AGW106R	Shallow	20F0069	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	**13.1**	**0.52**	0.39 U	0.24 U	**7.60 J**
AGW106R	Shallow	20F0069	6/2/2020	FD	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	**13.1**	0.50 U	0.39 U	0.24 U	**10.3 J**
AGW110R	Shallow	20F0069	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0736**	**0.487**	**2.21**	0.39 U	0.24 U	**2260**
AGW112R	Shallow	20F0073	6/2/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.779**	0.0200 U	--	--	--	--	--
AGW115	Shallow-WT	20E0349	5/29/2020	PDN	0.200 U	**1.72**	0.200 U	0.200 U	0.200 U	**0.475**	--	--	--	--	--
AGW116	Shallow-WT	20E0349	5/29/2020	PDN	0.200 U	0.200 U	**0.245**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW117	Shallow-WT	20F0086	6/3/2020	PDN	0.200 U	0.200 U	**0.363**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW118	Shallow-WT	20E0349	5/29/2020	PDN	0.200 U	0.200 U	**0.432**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW119	Intermediate	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW120	Shallow	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW125	Shallow	20F0069	6/2/2020	PDN	0.200 U	**1.41**	0.200 U	0.200 U	**5.75**	0.0200 U	--	--	--	--	--
AGW125	Shallow	20F0069	6/2/2020	PDFD	0.200 U	**1.45**	0.200 U	0.200 U	**5.88**	0.0200 U	--	--	--	--	--
AGW126	Intermediate	20F0073	6/2/2020	N	**0.268**	**4.63 J**	0.200 U	0.200 U	**6.97**	**0.0737**	--	--	--	--	--
AGW127	Shallow-WT	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW128	Shallow-WT	20E0349	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0668**	--	--	--	--	--
AGW129	Shallow-WT	20E0349	5/29/2020	PDN	0.200 U	0.200 U	**0.356**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW130	Shallow-WT	20E0340	5/28/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	**0.211**	0.0200 U	--	--	--	--	--
AGW131	Shallow	20E0337	5/27/2020	PDN	0.200 U	**0.811**	0.200 U	0.200 U	0.200 U	**0.994**	--	--	--	--	--
AGW133	Shallow	20F0086	6/3/2020	PDN	0.200 U	0.200 U	**0.244**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--

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2Q2020 Semiannual Groundwater Sampling Analytical Results
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Boeing Auburn Facility
Auburn, Washington

Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
					1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW134	Shallow	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0407**	--	--	--	--	--
AGW135	Shallow	20E0309	5/26/2020	PDN	0.200 U	**0.323**	0.200 U	0.200 U	**0.830**	0.0200 U	--	--	--	--	--
AGW136	Shallow	20E0309	5/26/2020	PDN	0.200 U	**1.00**	0.200 U	0.200 U	**1.87**	0.0200 U	--	--	--	--	--
AGW137	Intermediate	20E0309	5/26/2020	PDN	0.200 U	**1.36**	0.200 U	0.200 U	**2.94**	0.0200 U	--	--	--	--	--
AGW138	Deep	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.494**	0.0200 U	--	--	--	--	--
AGW139	Intermediate	20E0309	5/26/2020	PDN	0.200 U	**0.333**	0.200 U	0.200 U	**2.79**	0.0200 U	--	--	--	--	--
AGW140	Intermediate	20E0309	5/26/2020	PDN	0.200 U	**2.27**	0.200 U	0.200 U	**3.31**	**0.0975**	--	--	--	--	--
AGW141	Intermediate	20E0309	5/26/2020	PDN	0.200 U	**0.273**	0.200 U	0.200 U	**1.62**	0.0200 U	--	--	--	--	--
AGW142	Deep	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW143	Deep	20F0047	6/1/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW144	Intermediate	20F0047	6/1/2020	PDN	0.200 U	**1.82**	0.200 U	**0.361**	**0.910**	**0.237**	--	--	--	--	--
AGW145	Intermediate	20F0047	6/1/2020	PDN	0.200 U	**6.71**	0.200 U	**0.841**	**8.71**	**0.662**	--	--	--	--	--
AGW146	Deep	20F0047	6/1/2020	PDN	0.200 U	**1.46**	0.200 U	0.200 U	**3.33**	**0.111**	--	--	--	--	--
AGW147	Intermediate	20F0047	6/1/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW148	Intermediate	20F0047	6/1/2020	PDN	0.200 U	**1.25**	0.200 U	0.200 U	**2.52**	**0.0411**	--	--	--	--	--
AGW149	Intermediate	20F0047	6/1/2020	PDN	0.200 U	**0.250**	0.200 U	0.200 U	**2.37**	0.0200 U	--	--	--	--	--
AGW150	Intermediate	20E0350	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.740**	0.0200 U	--	--	--	--	--
AGW151	Intermediate	20E0309	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.276**	0.0200 U	--	--	--	--	--
AGW152	Shallow	20E0337	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**1.19**	--	--	--	--	--
AGW153	Shallow	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW154	Intermediate	20E0340	5/28/2020	PDN	0.200 U	**0.333**	0.200 U	0.200 U	**0.314**	0.0200 U	--	--	--	--	--
AGW155	Intermediate	20E0337	5/27/2020	PDN	0.200 U	**1.37**	0.200 U	**0.203**	0.200 U	**2.35**	--	--	--	--	--
AGW156	Intermediate	20E0337	5/27/2020	PDN	0.200 U	**3.80**	0.200 U	**0.309**	**0.688**	**0.679**	--	--	--	--	--
AGW157	Intermediate	20F0047	6/1/2020	PDN	0.200 U	**3.67**	0.200 U	0.200 U	**0.320**	**0.183**	--	--	--	--	--
AGW158	Intermediate	20F0104	6/3/2020	PDN	0.200 U	**0.444**	0.200 U	0.200 U	**1.34**	**0.0270**	--	--	--	--	--
AGW159	Deep	20F0104	6/3/2020	PDN	0.200 U	**0.538**	0.200 U	0.200 U	**2.43**	**0.0476**	--	--	--	--	--
AGW160	Intermediate	20F0046	6/1/2020	PDN	0.200 U	**0.222**	0.200 U	0.200 U	**2.13**	0.0200 U	--	--	--	--	--
AGW161	Intermediate	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.816**	0.0200 U	--	--	--	--	--
AGW162	Intermediate	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.399**	0.0200 U	--	--	--	--	--
AGW163	Intermediate	20E0337	5/27/2020	PDN	0.200 U	**1.11**	0.200 U	0.200 U	**3.40**	0.0200 U	--	--	--	--	--
AGW164	Intermediate	20F0122	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.928**	0.0200 U	--	--	--	--	--
AGW165	Shallow	20F0122	6/4/2020	PDN	0.200 U	**0.895**	0.200 U	0.200 U	**1.63**	**0.109**	--	--	--	--	--
AGW166	Intermediate	20E0317	5/27/2020	PDN	0.200 U	**1.20**	0.200 U	0.200 U	0.200 U	**0.229**	--	--	--	--	--
AGW167	Deep	20E0317	5/27/2020	PDN	0.200 U	**1.81**	0.200 U	0.200 U	**4.78**	**0.0767**	--	--	--	--	--
AGW168	Intermediate	20F0120	6/4/2020	PDN	0.200 U	**1.09**	0.200 U	0.200 U	**4.08**	**0.0247**	--	--	--	--	--
AGW169	Deep	20F0120	6/4/2020	PDN	0.200 U	**0.941**	0.200 U	0.200 U	**4.77**	**0.0212**	--	--	--	--	--
AGW170	Intermediate	20F0120	6/4/2020	PDN	0.200 U	**0.265**	0.200 U	0.200 U	**1.77**	0.0200 U	--	--	--	--	--

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					Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW171	Deep	20F0120	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**1.05**	0.0200 U	--	--	--	--	--
AGW172	Intermediate	20F0046	6/1/2020	PDN	0.200 U	**0.278**	0.200 U	0.200 U	**3.87**	0.0200 U	--	--	--	--	--
AGW173	Intermediate	20E0308	5/26/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW174	Intermediate	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**1.06**	0.0200 U	--	--	--	--	--
AGW175	Intermediate	20E0333	5/27/2020	N	0.200 U	**0.271**	0.200 U	0.200 U	**1.56**	0.0200 U	--	--	--	--	--
AGW176	Intermediate	20E0308	5/26/2020	PDN	0.200 U	**0.312**	0.200 U	0.200 U	**2.84**	0.0200 U	--	--	--	--	--
AGW177	Intermediate	20F0046	6/1/2020	PDN	0.200 U	**0.858**	0.200 U	0.200 U	**3.38**	0.0200 U	--	--	--	--	--
AGW178	Deep	20F0046	6/1/2020	PDN	0.200 U	**0.352**	0.200 U	0.200 U	**3.51**	0.0200 U	--	--	--	--	--
AGW179	Intermediate	20E0350	5/29/2020	PDN	0.200 U	**4.94**	0.200 U	0.200 U	0.200 U	**0.225**	--	--	--	--	--
AGW179	Intermediate	20E0350	5/29/2020	PDFD	0.200 U	**5.02**	0.200 U	0.200 U	0.200 U	**0.234**	--	--	--	--	--
AGW180	Deep	20E0350	5/29/2020	PDN	0.200 U	**0.292**	0.200 U	0.200 U	**2.46**	0.0200 U	--	--	--	--	--
AGW181	Intermediate	20F0046	6/1/2020	PDN	0.200 U	**1.28**	0.200 U	0.200 U	**3.06**	0.0200 U	--	--	--	--	--
AGW182	Intermediate	20F0121	6/4/2020	PDN	0.200 U	**2.27**	0.200 U	**0.243**	**1.43**	**0.160**	--	--	--	--	--
AGW183	Deep	20F0121	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW184	Intermediate	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.273**	0.0200 U	--	--	--	--	--
AGW185	Deep	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**1.88**	0.0200 U	--	--	--	--	--
AGW186	Intermediate	20F0085	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.537**	0.0200 U	--	--	--	--	--
AGW187	Intermediate	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**1.22**	0.0200 U	--	--	--	--	--
AGW188	Intermediate	20F0072	6/2/2020	N	0.200 U	**0.397**	0.200 U	0.200 U	**3.11**	0.0200 U	--	--	--	--	--
AGW189	Intermediate	20F0046	6/1/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.613**	0.0200 U	--	--	--	--	--
AGW190	Intermediate	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.960**	0.0200 U	--	--	--	--	--
AGW191	Off-Intermediate	20E0351	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW192	Off-Deep	20E0351	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW193	Shallow	20E0317	5/27/2020	PDN	0.200 U	**1.45**	0.200 U	0.200 U	**2.50**	**0.138**	--	--	--	--	--
AGW194	Shallow	20F0104	6/3/2020	PDN	0.200 U	**0.539**	0.200 U	0.200 U	**1.05**	0.0200 U	--	--	--	--	--
AGW195	Deep	20E0308	5/26/2020	PDN	0.200 U	**0.669**	0.200 U	0.200 U	**6.20**	0.0200 U	--	--	--	--	--
AGW196	Intermediate	20E0308	5/26/2020	PDN	0.200 U	**2.91**	0.200 U	0.200 U	0.200 U	**4.37**	--	--	--	--	--
AGW197	Deep	20F0085	6/3/2020	PDN	0.200 U	**0.902**	0.200 U	0.200 U	**5.94**	0.0200 U	--	--	--	--	--
AGW198	Intermediate	20F0085	6/3/2020	PDN	0.200 U	**0.469**	0.200 U	0.200 U	**4.95**	0.0200 U	--	--	--	--	--
AGW199	Deep	20E0308	5/26/2020	PDN	0.200 U	**1.95**	0.200 U	0.200 U	**7.21**	0.0200 U	--	--	--	--	--
AGW200-2	Shallow	20F0123	6/4/2020	N	0.200 U	**1.24**	0.200 U	0.200 U	0.200 U	**1.66 J**	--	--	--	--	--
AGW200-2	Shallow	20F0123	6/4/2020	FD	0.200 U	**1.25**	0.200 U	0.200 U	0.200 U	**1.34 J**	--	--	--	--	--
AGW200-5	Intermediate	20F0123	6/4/2020	N	0.200 U	**3.84**	0.200 U	**0.287**	**1.04**	**0.558**	--	--	--	--	--
AGW200-6	Deep	20F0123	6/4/2020	N	0.200 U	**4.33**	0.200 U	**0.350**	**0.545**	**0.604**	--	--	--	--	--
AGW201-2	Shallow	20F0123	6/4/2020	N	0.200 U	**1.90**	0.200 U	0.200 U	**0.307**	**1.07**	--	--	--	--	--
AGW201-5	Intermediate	20F0123	6/4/2020	N	0.200 U	**2.55**	0.200 U	0.200 U	**3.64**	**0.364**	--	--	--	--	--
AGW201-6	Deep	20F0123	6/4/2020	N	0.200 U	**3.49**	0.200 U	**0.267**	**5.95**	**0.364**	--	--	--	--	--

Table 1-2
2Q2020 Semiannual Groundwater Sampling Analytical Results
Volatile Organic Compounds, General Chemistry, and Dissolved Gases
Boeing Auburn Facility
Auburn, Washington

					Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW202-2	Shallow	20F0123	6/4/2020	N	0.200 U	**1.30**	0.200 U	0.200 U	**1.19**	**0.174**	--	--	--	--	--
AGW202-4	Intermediate	20F0123	6/4/2020	N	0.200 U	**0.933**	0.200 U	0.200 U	**2.19**	**0.201**	--	--	--	--	--
AGW202-6	Deep	20F0122	6/4/2020	N	0.200 U	**0.229**	0.200 U	0.200 U	**0.694**	0.0200 U	--	--	--	--	--
AGW203-2	Shallow	20F0122	6/4/2020	N	0.200 U	0.200 U	**0.319**	0.200 U	**0.828**	0.0200 U	--	--	--	--	--
AGW203-4	Intermediate	20F0122	6/4/2020	N	0.200 U	0.200 U	**0.331**	0.200 U	**2.35**	0.0200 U	--	--	--	--	--
AGW203-4	Intermediate	20F0122	6/4/2020	FD	0.200 U	0.200 U	**0.318**	0.200 U	**2.28**	0.0200 U	--	--	--	--	--
AGW203-6	Deep	20F0122	6/4/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW204	Intermediate	20F0086	6/3/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW205	Intermediate	20E0349	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW206	Intermediate	20E0337	5/27/2020	PDN	0.200 U	0.200 U	**0.400**	0.200 U	**0.736**	0.0200 U	--	--	--	--	--
AGW207-2	Shallow	20F0085	6/3/2020	N	0.200 U	**4.23**	0.200 U	0.200 U	**3.60**	**0.0791**	--	--	--	--	--
AGW207-4	Intermediate	20F0085	6/3/2020	N	0.200 U	**1.32**	0.200 U	0.200 U	**4.40**	**0.111**	--	--	--	--	--
AGW207-7	Deep	20F0085	6/3/2020	N	0.200 U	**0.422**	0.200 U	0.200 U	**4.18**	0.0200 U	--	--	--	--	--
AGW208-2	Shallow	20F0085	6/3/2020	N	0.200 U	**2.92**	0.200 U	0.200 U	**1.45**	**0.515**	--	--	--	--	--
AGW208-4	Intermediate	20F0085	6/3/2020	N	0.200 U	**0.937**	0.200 U	0.200 U	**2.40**	0.0200 U	--	--	--	--	--
AGW208-6	Deep	20F0085	6/3/2020	N	0.200 U	**0.423**	0.200 U	0.200 U	**3.72**	0.0200 U	--	--	--	--	--
AGW209-2	Shallow	20F0085	6/3/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.676**	--	--	--	--	--
AGW209-5	Intermediate	20F0085	6/3/2020	N	0.200 U	**0.963**	0.200 U	0.200 U	**1.38**	**0.856**	--	--	--	--	--
AGW209-6	Deep	20F0085	6/3/2020	N	0.200 U	**0.569**	0.200 U	0.200 U	**3.55**	0.0200 U	--	--	--	--	--
AGW210-2	Shallow	20F0072	6/2/2020	N	0.200 U	**0.286**	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW210-5	Intermediate	20F0072	6/2/2020	N	0.200 U	**0.861**	0.200 U	0.200 U	**1.12**	**0.0207**	--	--	--	--	--
AGW210-6	Deep	20F0072	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	**2.94**	0.0200 U	--	--	--	--	--
AGW211-2	Shallow	20F0072	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW211-5	Intermediate	20F0072	6/2/2020	N	0.200 U	**0.906**	0.200 U	0.200 U	**1.77**	0.0200 U	--	--	--	--	--
AGW211-6	Deep	20F0072	6/2/2020	N	0.200 U	**0.541**	0.200 U	0.200 U	**1.21**	0.0200 U	--	--	--	--	--
AGW211-6	Deep	20F0072	6/2/2020	FD	0.200 U	**0.602**	0.200 U	0.200 U	**1.19**	0.0200 U	--	--	--	--	--
AGW212-2	Shallow	20E0333	5/27/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW212-5	Intermediate	20E0333	5/27/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	**0.961**	0.0200 U	--	--	--	--	--
AGW212-7	Deep	20E0333	5/27/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	**3.40**	0.0200 U	--	--	--	--	--
AGW213	Deep	20F0046	6/1/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW214	Intermediate	20F0072	6/2/2020	N	0.200 U	**0.299**	0.200 U	0.200 U	**1.98**	0.0200 U	--	--	--	--	--
AGW215	Intermediate	20F0121	6/4/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW215	Intermediate	20F0121	6/4/2020	FD	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW216	Intermediate	20E0333	5/27/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	**0.832**	0.0200 U	--	--	--	--	--
AGW217	Intermediate	20E0350	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	**1.28**	0.0200 U	--	--	--	--	--
AGW218	Intermediate	20F0072	6/2/2020	N	0.200 U	**0.272**	0.200 U	0.200 U	**2.39**	0.0200 U	--	--	--	--	--
AGW219	Intermediate	20E0348	5/28/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--

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Auburn, Washington

					Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW220	Intermediate	20E0350	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	**0.294**	0.0200 U	--	--	--	--	--
AGW221	Intermediate	20E0350	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW221	Intermediate	20E0350	5/29/2020	FD	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW222	Intermediate	20E0349	5/29/2020	PDN	0.200 U	0.200 U	**0.434**	0.200 U	**0.340**	0.0200 U	--	--	--	--	--
AGW223	Deep	20E0340	5/28/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW224	Shallow-WT	20F0121	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW225	Off-Shallow	20E0351	5/29/2020	N	0.200 U	**3.00**	0.200 U	**0.242**	**1.38**	**0.353**	**1.93**	**4.32**	0.39 U	0.24 U	**341**
AGW226	Off-Shallow	20F0121	6/4/2020	N	0.200 U	**3.31**	0.200 U	**0.209**	**1.56**	**0.565**	**4.33**	**2.30**	0.39 U	0.24 U	**1150**
AGW227	Intermediate	20F0120	6/4/2020	PDN	0.200 U	**2.34**	0.200 U	**0.239**	**1.40**	**0.137**	--	--	--	--	--
AGW228	Shallow	20F0120	6/4/2020	N	0.200 U	**2.40**	0.200 U	**0.257**	**2.71**	**0.159**	--	--	--	--	--
AGW229	Shallow-WT	20F0120	6/4/2020	PDN	0.200 U	**1.52**	0.200 U	0.200 U	**1.28**	**0.0206**	--	--	--	--	--
AGW230	Deep	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.732**	0.0200 U	--	--	--	--	--
AGW231	Shallow	20F0085	6/3/2020	PDN	0.200 U	**0.689**	0.200 U	0.200 U	0.200 U	**1.44**	--	--	--	--	--
AGW232	Shallow	20E0308	5/26/2020	PDN	0.200 U	**1.12**	0.200 U	0.200 U	0.200 U	**6.70**	--	--	--	--	--
AGW233	Deep	20E0333	5/27/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW234	Deep	20E0348	5/28/2020	PDN	**0.240**	**1.56**	0.200 U	0.200 U	**6.59**	**0.0931**	--	--	--	--	--
AGW235-2	Shallow	20E0348	5/28/2020	N	0.200 U	**1.13**	0.200 U	**0.208**	0.200 U	**2.97**	--	--	--	--	--
AGW235-4	Intermediate	20E0348	5/28/2020	N	0.200 U	**10.3**	0.200 U	0.200 U	**1.64**	**0.0895**	--	--	--	--	--
AGW235-7	Deep	20E0348	5/28/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW236	Shallow	20E0308	5/26/2020	N	0.200 U	**5.11**	0.200 U	0.200 U	**2.58**	**0.114**	--	--	--	--	--
AGW237	Deep	20F0046	6/1/2020	PDN	**0.568**	**0.832**	0.200 U	0.200 U	**2.25**	0.0200 U	--	--	--	--	--
AGW238	Intermediate	20F0046	6/1/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW239	Shallow	20F0121	6/4/2020	N	0.200 U	**0.290**	0.200 U	0.200 U	0.200 U	**0.202**	--	--	--	--	--
AGW240-1	Off-Shallow-WT	20F0047	6/1/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	**0.117**	**7.99**	**2.18**	0.24 U	**5700**
AGW240-5	Off-Shallow	20F0047	6/1/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0368**	**0.143**	**5.68**	**2.18**	0.24 U	**4640**
AGW241-1	Shallow-WT	20E0347	5/28/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW241-5	Shallow	20E0347	5/28/2020	N	0.200 U	**0.436**	0.200 U	0.200 U	0.200 U	**0.0323**	--	--	--	--	--
AGW241-5	Shallow	20E0347	5/28/2020	FD	0.200 U	**0.445**	0.200 U	0.200 U	0.200 U	**0.0314**	--	--	--	--	--
AGW242-1	Shallow-WT	20E0351	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.159**	--	--	--	--	--
AGW242-2	Shallow	20E0351	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW242-5	Intermediate	20E0351	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW243-1	Shallow-WT	20F0047	6/1/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0463**	--	--	--	--	--
AGW243-3	Shallow	20F0047	6/1/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW243-5	Intermediate	20F0047	6/1/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW244	Shallow-WT	20F0120	6/4/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	**11.3**	**5.25**	0.39 U	0.24 U	**67.0**
AGW245	Shallow-WT	20F0121	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW246	Shallow-WT	20F0121	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--

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Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
					1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW247-1	Off-Shallow-WT	20E0347	5/28/2020	N	0.200 U	0.200 UJ	0.200 U	**0.232 J**	0.200 U	**0.352**	**0.170**	**8.39**	0.39 U	0.24 U	**5160**
AGW247-5	Off-Shallow	20E0351	5/29/2020	N	0.200 U	**0.303**	0.200 U	0.200 U	0.200 U	**0.565**	**0.125**	**5.88**	0.39 U	0.24 U	**3380**
AGW248-1	Shallow-WT	20F0047	6/1/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW248-5	Shallow	20F0047	6/1/2020	N	0.200 U	**1.55**	0.200 U	0.200 U	**2.90**	**0.150**	--	--	--	--	--
AGW249-1	Shallow-WT	20F0047	6/1/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.821**	--	--	--	--	--
AGW249-5	Shallow	20F0047	6/1/2020	N	0.200 U	**1.57**	0.200 U	0.200 U	**4.84**	**0.0405**	--	--	--	--	--
AGW249-5	Shallow	20F0047	6/1/2020	FD	0.200 U	**1.58**	0.200 U	0.200 U	**4.96**	**0.0404**	--	--	--	--	--
AGW250-1	Shallow-WT	20F0072	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW250-2	Shallow	20F0072	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW250-3	Intermediate	20F0072	6/2/2020	N	0.200 U	**0.453**	0.200 U	0.200 U	**0.372**	**0.0224**	--	--	--	--	--
AGW250-6	Deep	20F0072	6/2/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW251-1	Off-Shallow-WT	20F0104/20F0111/20F0120	6/3/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.223**	**50.9**	**12.35**	0.39 U	0.24 U	**250**
AGW251-2	Off-Shallow	20F0104	6/3/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.388**	**0.149**	**6.45**	**1.66**	**4.04**	**2100**
AGW251-3	Off-Intermediate	20F0104	6/3/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**2.46**	**0.119**	**6.41**	**1.67**	**4.82**	**1990**
AGW251-6	Deep	20F0104	6/3/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.157**	--	--	--	--	--
AGW252	Deep	20E0348	5/28/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW253	Intermediate	20E0348	5/28/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW254-1	Shallow-WT	20E0350	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW254-2	Shallow	20E0350	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW254-5	Intermediate	20E0350	5/29/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW255-1	Shallow-WT	20E0348	5/28/2020	N	0.200 U	**1.92**	0.200 U	0.200 U	**0.421**	**0.397**	--	--	--	--	--
AGW255-3	Shallow	20E0348	5/28/2020	N	0.200 U	**1.06**	0.200 U	0.200 U	0.200 U	**0.129**	--	--	--	--	--
AGW255-5	Intermediate	20E0348	5/28/2020	N	0.200 U	**0.727**	0.200 U	0.200 U	0.200 U	**0.119**	--	--	--	--	--
AGW256	Intermediate	20E0340	5/28/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	**0.652**	0.0200 U	--	--	--	--	--
AGW257	Shallow	20E0340	5/28/2020	PDN	0.200 U	0.200 U	**0.373**	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW258	Shallow	20E0340	5/28/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW259	Deep	20E0350	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW260	Deep	20E0351	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW261	Shallow	20E0317	5/27/2020	PDN	0.200 U	**1.76**	0.200 U	**0.245**	**2.14**	**0.0790**	--	--	--	--	--
AGW262	Off-Shallow-WT	20F0121	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.144**	--	--	--	--	--
AGW263	Off-Shallow-WT	20E0351	5/29/2020	PDN	0.200 U	**2.59**	0.200 U	0.200 U	**0.637**	**0.0801**	--	--	--	--	--
AGW264	Deep	20E0351	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW265	Intermediate	20E0351	5/29/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW266	Shallow	20F0046	6/1/2020	PDN	0.200 U	**0.378**	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW267	Intermediate	20F0120	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW268	Deep	20F0121	6/4/2020	PDN	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--

Table 1-2
2Q2020 Semiannual Groundwater Sampling Analytical Results
Volatile Organic Compounds, General Chemistry, and Dissolved Gases
Boeing Auburn Facility
Auburn, Washington

					Select VOCs by SW-846 8260C SIM (µg/L)						General Chemistry by EPA 300.0, SM5310C (mg/L)		Dissolved Gases by RSK-175 (µg/L)		
Sample Location	**Zone**	**Laboratory SDG**	**Sample Date**	**Sample Type**	1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride	Sulfate	Total Organic Carbon	Ethane	Ethene	Methane
AGW269	Off-Shallow	20E0305	5/26/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.744**	**0.137**	**7.86**	0.39 U	0.24 U	**2230**
AGW270	Off-Shallow	20E0317	5/27/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**1.57**	**0.134**	**9.18**	0.39 U	0.24 U	**4400**
AGW271	Off-Shallow	20E0305	5/26/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.677**	**0.124**	**10.09**	0.39 U	0.24 U	**6470 J**
AGW271	Off-Shallow	20E0305	5/26/2020	FD	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.689**	**0.125**	**10.18**	0.39 U	0.24 U	**4830 J**
AGW272	Off-Shallow	20E0317	5/27/2020	N	0.200 U	**2.63**	0.200 U	**0.394**	**0.311**	**1.41**	**0.273**	**4.57**	0.39 U	0.24 U	**428**
AGW273	Off-Shallow	20E0317	5/27/2020	N	0.200 U	**0.385**	0.200 U	0.200 U	0.200 U	**2.12**	**0.130**	**6.24**	0.39 U	0.24 U	**1140**
AGW274	Off-Shallow	20E0317	5/27/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**1.98**	**0.137**	**6.43**	0.39 U	0.24 U	**1350**
AGW275	Off-Shallow	20E0305	5/26/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.0220**	**0.122**	**7.34**	0.39 U	0.24 U	**2810**
AGW276-2	Off-Shallow	20E0347	5/28/2020	N	0.200 U	**0.846**	0.200 U	0.200 U	0.200 U	**0.511**	--	--	--	--	--
AGW276-5	Off-Intermediate	20E0347	5/28/2020	N	0.200 U	**4.86**	0.200 U	**0.405**	0.200 U	**1.64**	--	--	--	--	--
AGW276-5	Off-Intermediate	20E0347	5/28/2020	FD	0.200 U	**4.63**	0.200 U	**0.383**	0.200 U	**1.59**	--	--	--	--	--
AGW276-6	Off-Deep	20E0347	5/28/2020	N	0.200 U	**1.78**	0.200 U	0.200 U	**2.29**	**0.119**	--	--	--	--	--
AGW277	Shallow-WT	20E0349	5/29/2020	N	--	--	--	--	--	--	--	--	--	--	--
AGW278-1	Shallow-WT	20F0046/20F0038	6/1/2020	N	0.200 U	**0.887**	0.200 U	0.200 U	**0.682**	**0.270**	--	--	--	--	--
AGW278-2	Shallow	20F0046	6/1/2020	N	0.200 U	**1.26**	0.200 U	0.200 U	**0.745**	**0.355**	--	--	--	--	--
AGW278-4	Intermediate	20F0122	6/4/2020	N	0.200 U	**0.557**	0.200 U	0.200 U	0.200 U	**1.80**	--	--	--	--	--
AGW278-6	Deep	20F0122	6/4/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
AGW281	Shallow-WT	20E0340	5/28/2020	N	--	--	--	--	--	--	--	--	--	--	--
AGW282	Shallow-WT	20E0340	5/28/2020	N	--	--	--	--	--	--	--	--	--	--	--
APP-057	Shallow	20E0348	5/28/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.0200 U	--	--	--	--	--
IW34	On-Shallow	20E0305	5/26/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**3.09**	**0.139**	**9.73**	0.39 U	0.24 U	**11400 J**
IW36	On-Shallow	20E0305	5/26/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**1.54**	**0.148**	**8.57**	0.39 U	0.24 U	**1690**
IW37	Shallow	20E0305	5/26/2020	N	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	**0.801**	**0.116**	**6.77**	0.39 U	0.24 U	**3090**

Notes:

Bold text indicates detected analyte.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

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

Abbreviations/Acronyms:

FD = field duplicate

µg/L = micrograms per liter

mg/L = milligrams per liter

-- = not analyzed

N = primary sample

SDG = sample delivery group

VOCs = volatile organic compounds

WT = water table

Table 1-3
2Q2020 Semiannual Groundwater Sampling Analytical Results
BTEX, Petroleum Hydrocarbons, Dissolved Metals, and Cyanide
Boeing Auburn Facility
Auburn, Washington

Sample Location	Zone	Laboratory SDG	Sample Date	Sample Type	BTEX by SW-846 8260C (µg/L)						Petroleum Hydrocarbons by NWTPH-Gx/Dx (mg/L)			Dissolved Metals by SW-846 6020A (mg/L)				Cyanide by ASTM D7511-12/D7237-10 (mg/L)	
					Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Xylenes	Gasoline Range Organics (C7-C12)	Diesel Range Organics (C12-C24)	Oil Range Organics (C24-C40)	Arsenic	Cadmium	Copper	Nickel	Cyanide	Free Cyanide
AGW010	Shallow-WT	20E0307	5/27/2020	N	**0.71**	**0.58**	**230 J**	**13.6**	**1.11**	**14.7**	**5.53**	**0.488 J**	**0.814 J**	--	--	--	--	--	--
AGW010	Shallow-WT	20E0307	5/27/2020	FD	**0.78**	**0.71**	**177 J**	**15.5**	**1.30**	**16.8**	**5.55**	**0.363 J**	0.200 UJ	--	--	--	--	--	--
AGW039	Shallow-WT	20F0086	6/3/2020	N	--	--	--	--	--	--	--	--	--	**0.00849**	--	--	--	--	--
AGW044	Shallow-WT	20E0340	5/28/2020	N	--	--	--	--	--	--	--	**0.149**	0.200 U	--	--	--	--	--	--
AGW047	Shallow	A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	**--**	**--**	**--**	**--**	--	0.00500 U
AGW048	Shallow	20F0046/A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	**--**	**0.00421**	**--**	**0.00131**	--	0.00500 U
AGW049	Shallow	20F0046/A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	**--**	**0.0104**	**0.101**	**0.0135**	--	0.00500 U
AGW050	Shallow	20F0046/A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	--	**0.00897**	--	**0.0121**	**1.24**	**0.0148**
AGW050	Shallow	20F0046/A0F0038	6/1/2020	FD	--	--	--	--	--	--	--	--	--	--	**0.00870**	--	**0.0115**	**1.28**	**0.0127**
AGW128	Shallow-WT	20E0349	5/29/2020	N	--	--	--	--	--	--	--	**1.12**	**6.23**	--	--	--	--	--	--
AGW130	Shallow-WT	20E0340	5/28/2020	N	--	--	--	--	--	--	--	0.100 U	**0.326**	--	--	--	--	--	--
AGW277	Shallow-WT	20E0349	5/29/2020	N	--	--	--	--	--	--	--	0.100 U	0.200 U	--	--	--	--	--	--
AGW278-1	Shallow-WT	20F0046/A0F0038	6/1/2020	N	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.00537**	0.00500 U
AGW281	Shallow-WT	20E0340	5/28/2020	N	--	--	--	--	--	--	--	**0.105**	**0.468**	--	--	--	--	--	--
AGW282	Shallow-WT	20E0340	5/28/2020	N	--	--	--	--	--	--	--	0.100 U	0.200 U	--	--	--	--	--	--

Notes:

Bold text indicates detected analyte.

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

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

Abbreviations/Acronyms:

FD = field duplicate

µg/L = micrograms per liter

mg/L = milligrams per liter

-- = not analyzed

N = primary sample

SDG = sample delivery group

WT = water table

Attachment 2

Pilot Test Results

Legend

- One-Time Surface Water Sampling Location
- Offsite Water Table Well
- Shallow Monitoring Well
- Shallow Observation Well (not part of ongoing monitoring)
- Shallow Injection Well
- Shallow Injection Well (not part of ongoing monitoring)
- Waterways

Notes

1. SW-CD13 was sampled in September 2017 for total organic carbon analysis.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 120 240

Scale in Feet

Base map source: Geometrix 2003; Aerial Photo Source: Esri World Imagery; Parcel Data Source: King County GIS 2016

N

LANDAU ASSOCIATES

Boeing Auburn Auburn, Washington	**Pilot Test Well Locations**	Figure 2-1

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Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW225	WT	12/1/2014	-0.8	<0.2	2.3	5.7	0.6	<0.2	0.5	<1.0	<1.0	1.20	-76.8	2.6	4.8	290	Fe/S	3.7	90	0.00	0.19	0.72	0.09	0.00
		8/14/2015	-0.1	<0.2	1.9	5.1	0.5	<0.2	0.49	<1.0	<1.0	1.39	**	6.4	4.1	360	Fe/S	4.2	80	0.00	0.18	0.72	0.10	0.00
		12/8/2015	0.3	<0.2	2.1	4.8	0.5	<0.2	0.5	<1.0	<1.0	2.0	-54.7	4.0	4.2	170	Fe/S	3.8	79	0.00	0.20	0.70	0.10	0.00
		3/2/2016	0.5	<0.2	1.9	4.6	0.4	<0.2	0.54	<1.0	<1.0	0.73	-14	2.5	3.3	420	Fe/S	4.3	75	0.00	0.19	0.69	0.12	0.00
		6/23/2016	0.8	<0.2	2.3	4.4	0.5	<0.2	0.5	<1.0	<1.0	3.40	271	2.0	4.9	330	Fe/S	3.6	76	0.00	0.23	0.66	0.11	0.00
		9/8/2016	1.0	<0.2	2.0	4.4	0.5	<0.2	0.46	<1.0	<1.0	0.48	-6.0	2.5	5.7	340	Fe/S	4.3	73	0.00	0.21	0.69	0.10	0.00
		12/2/2016	1.2	<0.2	2.4	4.8	0.5	<0.2	0.44	<1.0	<1.0	0.96	4.5	5.0	4.7	280	Fe/S	3.4	80	0.00	0.23	0.68	0.09	0.00
		3/10/2017	1.5	<0.2	2.2	4.3	0.4	<0.2	0.6	<1.0	<1.0	0.26	71.5	2.0	3.4	320	Fe/S	4.9	75	0.00	0.22	0.65	0.13	0.00
		6/7/2017	1.8	<0.2	2.5	4.5	0.5	<0.2	0.40	<1.0	<1.0	0.53	62.6	2.0	4.9	280	Fe/S	3.8	77	0.00	0.25	0.67	0.08	0.00
		9/7/2017	2.0	<0.20	2.1	4.3	0.49	<0.20	0.33	<0.40	<0.57	0.46	-31.3	3.5	5.0	430	Fe/S	4.2	71	0.00	0.23	0.70	0.07	0.00
		11/28/2017	2.2	<0.20	1.9	3.7	0.36	<0.20	0.39	<0.40	<0.57	2.85	-85.1	4.0	5.4	390	Fe/S	4.1	63	0.00	0.23	0.67	0.10	0.00
		6/5/2018	2.8	<0.20	1.8	3.2	0.32	<0.20	0.34	<0.40	<0.57	0.74	108.8	3	5.1	330	Fe/S	4.4	55	0.00	0.25	0.65	0.10	0.00
		12/7/2018	3.3	<0.200	2.17	3.44	0.337	<0.200	0.316	<0.24	<0.39	0.5	-38.6	5.00	5.16	390	Fe/S	3.46	61	0.00	0.27	0.64	0.08	0.00
		5/31/2019	3.7	<0.200	2.00	4.01	0.401	<0.200	0.435	<0.24	<0.39	0.58	166.8	1.50	3.22	476	Fe/S	4.52	68	0.00	0.22	0.67	0.10	0.00
		12/5/2019	4.3	<0.200	1.88	3.03	0.251	<0.200	0.320	<1.14	<1.23	0.28	-22.6	4.0	3.08	355	Fe/S	4.28	53	0.00	0.27	0.64	0.10	0.00
		5/29/2020	4.7	<0.200	1.38	3.00	0.242	<0.200	0.353	<0.24	<0.39	0.17	46.6	3.9	1.93	341	Fe/S	4.32	50	0.00	0.21	0.67	0.11	0.00
AGW226	WT	8/14/2015	-0.1	<0.2	4.1	3.1	0.3	<0.2	0.56	<1.0	<1.0	0.55	-12.2	2.0	8	970	S/M	2.6	75	0.00	0.41	0.47	0.12	0.00
		12/2/2015	0.2	<0.2	0.5	1.8	<0.2	<0.2	0.4	<1.0	<1.0	7.29	-26.1	2.0	7.8	1000	S/M	5.5	29	0.00	0.13	0.65	0.22	0.00
		3/3/2016	0.5	<0.2	3.6	3.1	0.3	<0.2	0.54	<1.0	<1.0	0.54	-28.45	2.5	6.5	1300	S/M	2.4	71	0.00	0.39	0.49	0.12	0.00
		6/21/2016	0.8	<0.2	1	4.8	0.3	<0.2	0.7	<1.0	<1.0	0.44	177	2.0	7.4	1200	S/M	2.7	71	0.00	0.11	0.74	0.16	0.00
		9/8/2016	1.0	<0.2	1.1	3.8	0.3	<0.2	0.90	<1.0	<1.0	0.70	82.5	0.0	17.6	1100	S/M	4.2	65	0.00	0.13	0.65	0.22	0.00
		12/7/2016	1.3	<0.2	2.6	4.0	0.3	<0.2	0.73	<1.0	<1.0	1.67	45.1	3.0	7.6	920	S/M	2.4	76	0.00	0.26	0.58	0.15	0.00
		3/7/2017	1.5	<0.2	3.6	3.5	0.3	<0.2	0.60	<0.1	<0.1	0.48	-31.2	4.0	6.7	1000	S/M	2.5	76	0.00	0.36	0.51	0.13	0.00
		6/6/2017	1.8	<0.2	3.9	3.4	0.3	<0.2	0.5	<1.0	<1.0	0.46	75.9	3.0	7.5	970	S/M	2.3	76	0.00	0.39	0.50	0.11	0.00
		9/5/2017	2.0	<0.20	3.6	3.6	0.31	<0.20	0.36	<0.40	<0.57	0.68	-37.7	3.0	7.4	1400	S/M	2.6	73	0.00	0.37	0.55	0.08	0.00
		11/29/2017	2.2	<0.20	1.8	1.4	<0.20	<0.20	0.35	<0.40	<0.57	2.33	-65.7	4.5	19	870	S/M	4.4	34	0.00	0.41	0.43	0.17	0.00
		6/11/2018	2.8	<0.20	1.5	3.5	0.23	<0.20	0.49	<0.40	<0.57	0.61	105.2	3.0	7.6	960	S/M	2.5	58	0.00	0.20	0.67	0.14	0.00
		12/3/2018	3.2	<0.200	<0.200	0.284	<0.200	<0.200	0.295	<0.24	<0.39	0.96	175.0	1.00	70.2	613	S/M	13.89	8	0.00	0.00	0.38	0.62	0.00
		6/5/2019	3.8	<0.200	1.18	4.14	0.248	<0.200	0.561	<0.24	<0.39	0.36	-8.4	2.60	5.78	1480	S/M	2.35	63	0.00	0.14	0.72	0.14	0.00
		12/2/2019	4.2	<0.200	1.25	2.00	<0.200	<0.200	0.795	<1.14	<1.23	0.20	-94.9	0.80	22.2	1600	S/M	7.06	43	0.00	0.22	0.48	0.30	0.00
		6/4/2020	4.8	<0.200	1.56	3.31	0.209	<0.200	0.565	<0.24	<0.39	0.21	-48.5	3.50	4.33	1150	S/M	2.3	57	0.00	0.21	0.63	0.16	0.00

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW240-1	WT	12/1/2014	-0.8	<0.020	<0.2	<0.2	0.3	<0.2	0.3	<1.0	3.5	1.32	-169.5	2.7	<1.0	3200	M	8.6	8	0.00	0.00	0.02	0.04	0.94
		8/14/2015	-0.1	<0.020	<0.2	<0.2	0.2	<0.2	0.049	<1.0	2.5	0.54	-67.3	1.8	<1.0	2900	M	8.1	3	0.00	0.00	0.02	0.01	0.97
		12/7/2015	0.3	<0.020	<0.2	<0.2	<0.2	<0.2	0.3	<1.0	3.1	1.89	-83.3	2.5	<1.0	2800	M	7.5	5	0.00	0.00	0.00	0.04	0.96
		3/3/2016	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	1	<1.0	3.2	0.73	-13.23	5.0	<1.0	2900	M	7.9	16	0.00	0.00	0.00	0.13	0.87
		6/15/2016	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	0.11	<1.0	3.4	1.9	-42.5	1.5	<1.0	5700	M	7.5	2	0.00	0.00	0.00	0.02	0.98
		9/8/2016	1.0	<0.2	<0.2	<0.2	<0.2	<0.2	0.091	<1.0	4.2	0.60	-45.4	4.5	<1.0	8900	M	7.7	1	0.00	0.00	0.00	0.01	0.99
		11/30/2016	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.13	<1.0	2.5	0.64	-22.4	7.0	<1.0	14000	M	7.3	2	0.00	0.00	0.00	0.02	0.98
		3/10/2017	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	0.13	<1.0	6.2	0.50	83.4	1.5	<1.0	19000	M	8.9	2	0.00	0.00	0.00	0.01	0.99
		6/6/2017	1.8	<0.2	<0.2	<0.2	<0.2	<0.2	0.049	<1.0	1.1	**	15.9	2.0	<1.0	1200	M	7.1	1	0.00	0.00	0.00	0.02	0.98
		9/5/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.068	<0.40	5.6	0.58	-77.6	3.4	<1.2	11000	M	7.9	1	0.00	0.00	0.00	0.01	0.99
		11/27/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	<0.57	6.57	-63.4	1.5 (c)	<1.2	1000	M	7.8	0	0.00	0.00	0.00	0.00	0.00
		6/5/2018	2.8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	3.6	0.77	108.1	4	<1.2	11000	M	8.1	0	0.00	0.00	0.00	0.00	1.00
		12/7/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.0531	<0.24	<0.39	0.59	-61.6	6.50	0.211	11700	M	7.36	1	0.00	0.00	0.00	1.00	0.00
		6/5/2019	3.8	<0.200	<0.200	<0.200	<0.200	<0.200	0.0624	<0.24	2.68	1.32	-19.3	4.20	0.127	9690	M	8.07	1	0.00	0.00	0.00	1.00	0.00
		12/5/2019	4.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.0365	<1.14	2.13	0.32	-33.9	4.60	0.442	8350	M	8.67	1	0.00	0.00	0.00	0.01	0.99
		6/1/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	<0.0200	<0.24	2.18	0.33	126.1	3.00	0.117	5700	M	7.99	0	0.00	0.00	0.00	0.00	1.00
AGW240-5	SZ	12/1/2014	-0.8	<0.020	<0.2	4.9	0.7	<0.2	6.6	<1.0	1	0.51	-116.1	2.8	<1.0	2200	M	6.6	163	0.00	0.00	0.29	0.54	0.17
		8/14/2015	-0.1	<0.020	<0.2	3.3	0.4	<0.2	5.6	1.2	<1.0	0.77	-41.7	2.8	<1.0	2000	M	5.4	128	0.00	0.00	0.22	0.53	0.25
		12/7/2015	0.3	<0.020	<0.2	1.8	0.3	<0.2	4.3	1.3	1.3	0.81	-86.8	6.0	<1.0	2200	M	6.5	90	0.00	0.00	0.12	0.38	0.50
		3/3/2016	0.5	<0.2	<0.2	1.7	0.3	<0.2	3.1	<1.0	<1.0	0.55	-19.15	6.0	<1.0	1700	M	6.9	70	0.00	0.00	0.29	0.71	0.00
		6/15/2016	0.8	<0.2	<0.2	0.3	0.3	<0.2	2.5	2	2.3	0.33	-40.8	3.0	<1.0	8100	M	20.2	46	0.00	0.00	0.03	0.21	0.76
		9/8/2016	1.0	<0.2	<0.2	<0.2	0.2	<0.2	0.20	<1.0	3.7	0.36	-48.8	4.0	<1.0	31000	M	5.7	5	0.00	0.00	0.02	0.02	0.96
		11/30/2016	1.2	<0.2	<0.2	<0.2	0.2	<0.2	0.10	<1.0	3.7	0.51	-34.4	8.0	<1.0	28000	M	6.2	4	0.00	0.00	0.02	0.01	0.97
		3/10/2017	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	0.066	<1.0	9.2	0.24	58.7	4.0	<1.0	22000	M	5.8	1	0.00	0.00	0.00	0.00	1.00
		6/6/2017	1.8	<0.2	<0.2	<0.2	<0.2	<0.2	0.074	<1.0	7.6	0.73	63.8	3.0	<1.0	9500	M	4.8	1	0.00	0.00	0.00	0.00	1.00
		9/5/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.062	<0.80	4.5	0.71	-54.7	2.4	<1.2	20000	M	5.9	1	0.00	0.00	0.00	0.01	0.99
		11/27/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	4.6	1.60	-67.3	2.5 (c)	<1.2	19000	M	7.0	0	0.00	0.00	0.00	0.00	1.00
		6/5/2018	2.8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	5.1	0.42	104.1	4.5	<1.2	9200	M	5.3	0	0.00	0.00	0.00	0.00	1.00
		12/7/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.0237	<0.24	<0.39	0.38	-60.8	6.50	<0.100	12300	M	6.89	0.4	0.00	0.00	0.00	1.00	0.00
		6/5/2019	3.8	<0.200	<0.200	<0.200	<0.200	<0.200	0.0475	<0.24	2.86	0.39	-80.4	6.00	0.134	11900	M	5.75	0.8	0.00	0.00	0.00	1.00	0.00
		12/5/2019	4.3	<0.200	<0.200	<0.200	<0.200	<0.200	<0.0200	<1.14	2.47	0.41	-48.1	4.00	0.161	5060	M	7.47	0.0	0.00	0.00	0.00	0.00	1.00
		6/1/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.0368	<0.24	2.18	0.64	39.8	5.50	0.143	4640	M	5.68	0.6	0.00	0.00	0.00	0.01	0.99
AGW244	WT	12/1/2016	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.020	<1.0	<1.0	0.96	20.1	0.0	13.2	54	N	3.8	0	0.00	0.00	0.00	0.00	0.00
		3/10/2017	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.020	<1.0	<1.0	6.3	88	0.5	15.2	<3.0	Fe	5.4	0	0.00	0.00	0.00	0.00	0.00
		6/5/2017	1.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.020	<1.0	<1.0	0.62	41.2	2.0	3.8	4600	S/M	53.1	0	0.00	0.00	0.00	0.00	0.00
		9/5/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	<0.57	0.59	-28.8	3.8	5.4	360	Fe/S	9.3	0	0.00	0.00	0.00	0.00	0.00
		11/27/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	<0.57	5.15	36.2	1.0	14	0.30	Fe	4.7	0	0.00	0.00	0.00	0.00	0.00
		6/7/2018	2.8	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	<0.57	0.58	113.4	1.5	6.6	1000	S/M	26	0	0.00	0.00	0.00	0.00	0.00
		12/3/2018	3.2	<0.200	<0.200	<0.200	<0.200	<0.200	<0.0200	<0.24	<0.39	2.85	146.7	1.00	10.8	<0.65	N/Fe	4.54	0	0.00	0.00	0.00	0.00	0.00
		6/5/2019	3.8	<0.200	<0.200	<0.200	<0.200	<0.200	<0.0200	<0.24	<0.39	0.5	13.0	2.00	6.55	605	S/M	15.11	0	0.00	0.00	0.00	0.00	0.00
		12/4/2019	4.3	<0.200	<0.200	<0.200	<0.200	<0.200	<0.0200	<1.14	<1.23	0.76	-169.8	1.20	15.3	506	S/M	11.20	0	0.00	0.00	0.00	0.00	0.00
		6/4/2020	4.8	<0.200	<0.200	<0.200	<0.200	<0.200	<0.0200	<0.24	<0.39	0.68	114.7	1.00	11.3	67	Fe/S	5.25	0	0.00	0.00	0.00	0.00	0.00

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW247-1	WT	12/2/2014	-0.8	<0.020	<0.2	0.8	<0.2	<0.2	0.17	<1.0	1	0.64	-76.1	2.5	6.3	3600	S/M	57.4	11	0.00	0.00	0.19	0.06	0.75
		8/14/2015	-0.1	<0.020	<0.2	3.4	0.4	<0.2	2.5	<1.0	<1.0	0.49	-61.4	3.4	<1.0	5200	M	9.6	79	0.00	0.00	0.49	0.51	0.00
		12/2/2015	0.2	<0.020	<0.2	1.5	0.3	<0.2	2.1	<1.0	<1.0	4.32	-101.2	5.5	1.1	6900	M	13.2	52	0.00	0.00	0.36	0.64	0.00
		3/2/2016	0.5	<0.2	<0.2	0.9	0.4	<0.2	4	<1.0	<1.0	0.44	-32.23	6.0	<1.0	7100	M	9.4	77	0.00	0.00	0.17	0.83	0.00
		6/15/2016	0.8	<0.2	<0.2	<0.2	0.5	<0.2	4.9	<1.0	<1.0	0.43	-49.5	2.5	<1.0	6100	M	9.7	84	0.00	0.00	0.06	0.94	0.00
		9/8/2016	1.0	<0.2	<0.2	<0.2	0.4	<0.2	4.7	<1.0	<1.0	0.62	-48.6	2.5	1.3	4200	M	11.1	79	0.00	0.00	0.05	0.95	0.00
		12/1/2016	1.2	<0.2	<0.2	<0.2	0.3	<0.2	4.0	<1.0	<1.0	0.74	-8.5	5.0	<1.0	4200	M	13.2	67	0.00	0.00	0.05	0.95	0.00
		3/7/2017	1.5	<0.2	<0.2	<0.2	0.4	<0.2	5.1	<1.0	<1.0	0.61	-47.3	4.5	<1.0	6500	M	10.2	86	0.00	0.00	0.05	0.95	0.00
		6/5/2017	1.8	<0.2	<0.2	<0.2	0.5	<0.2	4.8	<1.0	<1.0	0.79	0.9	2.0	<1.0	6700	M	9.2	82	0.00	0.00	0.06	0.94	0.00
		9/6/2017	2.0	<0.20	<0.20	<0.20	0.52	<0.20	6.5	<0.40	<0.57	0.52	-113.8	2.8	<1.2	6200	M	9.8	109	0.00	0.00	0.05	0.95	0.00
		11/28/2017	2.2	<0.20	<0.20	<0.20	0.23	<0.20	2.6	<0.40	<0.57	2.66	-74.2	3.5	2.7	4500	S/M	14	44	0.00	0.00	0.05	0.95	0.00
		3/13/2018	2.5	<0.20	<0.20	<0.20	0.41	<0.20	5.8	--	--	1.53	156.7	--	--	--	--	--	97	0.00	0.00	0.04	0.96	0.00
		6/11/2018	2.8	<0.20	<0.20	<0.20	0.39	<0.20	3.1	1.0	1.1	0.66	108.7	4.50	<1.2	4500	M	8.6	54	0.00	0.00	0.03	0.39	0.57
		9/4/2018	3.0	<0.20	<0.20	<0.20	0.44	<0.20	3.4	--	--	1.04	103.6	--	--	--	--	--	59	0.00	0.00	0.08	0.92	0.00
		12/3/2018	3.2	<0.200	<0.200	<0.200	<0.200	<0.200	0.369	<0.24	<0.39	1.25	-11.8	4.00	8.69	2360	S/M	16.85	6	0.00	0.00	0.00	1.00	0.00
		5/28/2019	3.7	<0.200	<0.200	<0.200	0.318	<0.200	1.77	<0.24	<0.39	0.55	-40.4	4.50	0.212	7310	M	8.28	32	0.00	0.00	0.10	0.90	0.00
		12/2/2019	4.2	<0.200	<0.200	<0.200	0.207	<0.200	0.38	<1.14	<1.23	0.69	-102.1	5.00	0.81	2110	M	15.91	8	0.00	0.00	0.26	0.74	0.00
		5/28/2020	4.7	<0.200	<0.200	<0.200	0.232	<0.200	0.352	<0.24	<0.39	0.79	10.0	5.50	0.17	5160	M	8.39	8	0.00	0.00	0.30	0.70	0.00
AGW247-5	SZ	12/2/2014	-0.8	<0.020	<0.2	6.6	0.7	<0.2	1.7	<1.0	1.7	0.22	-136	5.0	<1.0	4000	M	21.3	103	0.00	0.00	0.47	0.17	0.36
		8/14/2015	-0.1	<0.020	<0.2	4.7	0.8	<0.2	3	<1.0	<1.0	0.54	-90.3	2.4	1.1	3400	M	6.2	105	0.00	0.00	0.54	0.46	0.00
		12/2/2015	0.2	<0.020	<0.2	2.9	0.7	<0.2	4.0	<1.0	<1.0	4.76	-97.4	4.5	<1.0	2100	M	6.7	101	0.00	0.00	0.37	0.63	0.00
		3/3/2016	0.5	<0.2	<0.2	2.2	0.7	<0.2	4.5	<1.0	<1.0	0.51	-63.1	6.5	<1.0	2000	M	5.7	102	0.00	0.00	0.29	0.71	0.00
		6/15/2016	0.8	<0.2	<0.2	1.8	0.8	<0.2	4.4	<1.0	<1.0	0.34	-72.1	2.0	<1.0	2300	M	5.4	97	0.00	0.00	0.28	0.72	0.00
		9/8/2016	1.0	<0.2	<0.2	1.3	0.6	<0.2	3.9	<1.0	<1.0	0.34	-77.9	3.5	1.6	1300	M	6.7	82	0.00	0.00	0.24	0.76	0.00
		12/1/2016	1.2	<0.2	<0.2	1.6	0.7	<0.2	4.0	<1.0	<1.0	0.65	-69.2	4.0	<1.0	1400	M	5.7	88	0.00	0.00	0.27	0.73	0.00
		3/7/2017	1.5	<0.2	<0.2	0.7	0.5	<0.2	3.9	<1.0	1.5	0.59	-89.3	3.0	<1.0	1400	M	5.5	75	0.00	0.00	0.10	0.50	0.40
		6/5/2017	1.8	<0.2	<0.2	1.2	0.5	<0.2	2.6	<1.0	2.1	0.45	-13.1	2.0	<1.0	1600	M	5.4	59	0.00	0.00	0.14	0.32	0.54
		9/6/2017	2.0	<0.20	<0.20	1.1	0.43	<0.20	2.7	<0.40	1.7	0.51	-118.1	1.6	<1.2	2200	M	5.9	59	0.00	0.00	0.14	0.37	0.49
		11/29/2017	2.2	<0.20	<0.20	1.2	0.44	<0.20	2.0	<0.40	1.7	2.15	-103.9	4.2 (b)	<1.2	1600	M	6.5	49	0.00	0.00	0.16	0.30	0.54
		6/11/2018	2.8	<0.20	<0.20	0.48	0.3	<0.20	1.1	0.87	2.9	0.99	113.9	3.50	<1.2	2400	M	5.9	26	0.00	0.00	0.05	0.11	0.83
		12/3/2018	3.2	<0.200	<0.200	0.999	0.422	<0.200	1.72	<0.24	<0.39	0.60	-44.9	6.00	<0.100	3120	M	5.42	42	0.00	0.00	0.35	0.65	0.00
		5/28/2019	3.7	<0.200	<0.200	0.824	0.273	<0.200	1.06	<0.24	<0.39	0.42	-61.1	2.00	0.157	3520	M	5.23	28	0.00	0.00	0.40	0.60	0.00
		12/2/2019	4.2	<0.200	<0.200	0.446	0.294	<0.200	0.957	<1.14	<1.23	0.30	-102.9	4.00	0.351	1920	M	6.22	23	0.00	0.00	0.33	0.67	0.00
		5/29/2020	4.7	<0.200	<0.200	0.303	<0.200	<0.200	0.565	<0.24	<0.39	0.55	13.0	5.5 (d)	0.125	3380	M	5.88	12	0.00	0.00	0.26	0.74	0.00

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW251-1	WT	12/2/2014	-0.8	<0.020	<0.2	<0.2	<0.2	<0.2	1.8	2.2	5.8	0.83	-73.1	3.4	37.2	16000	S/M	27.3	29	0.00	0.00	0.00	0.10	0.90
		8/14/2015	-0.1	<0.020	<0.2	<0.2	<0.2	<0.2	0.62	<1.0	<1.0	4.51	**	6.8	1.3	140	Fe/S	16.9	10	0.00	0.00	0.00	1.00	0.00
		12/3/2015	0.2	<0.020	<0.2	<0.2	<0.2	<0.2	0.23	<1.0	<1.0	**	-60.5	1.0	280	440	Fe	8.9	4	0.00	0.00	0.00	1.00	0.00
		3/3/2016	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	0.15	<1.0	<1.0	0.85	41.55	1.0	117	560	Fe/S	33.8	2	0.00	0.00	0.00	1.00	0.00
		6/20/2016	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	1.1	<1.0	<1.0	0.83	124.4	2.0	20.7	1800	S/M	11	18	0.00	0.00	0.00	1.00	0.00
		9/6/2016	1.0	<0.2	<0.2	<0.2	<0.2	<0.2	1.6	1.3	<1.0	2.19	-78.2	4.5	4.3	1100	S/M	13.1	26	0.00	0.00	0.00	0.36	0.64
		12/2/2016	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.037	<1.0	<1.0	1.71	27.9	1.0	281	59	Fe	11.5	1	0.00	0.00	0.00	1.00	0.00
		3/7/2017	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	0.050	<1.0	<1.0	0.78	-27.7	2.0	203	130	Fe	23.3	1	0.00	0.00	0.00	1.00	0.00
		6/7/2017	1.8	<0.2	<0.2	<0.2	<0.2	<0.2	1.0	<1.0	<1.0	5.88	61.6	2.0	69.7	410	Fe	11.5	16	0.00	0.00	0.00	1.00	0.00
		9/6/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	<0.57	5.13	-48.2	1.6	28	120	Fe	11	0	0.00	0.00	0.00	0.00	0.00
		12/1/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	<0.57	4.20	-59.2	5.5	210	54	Fe	13	0	0.00	0.00	0.00	0.00	0.00
		6/8/2018	2.8	<0.20	<0.20	<0.20	<0.20	<0.20	0.34	<0.40	0.97	1.44	115.8	5	110	220	Fe	15	5	0.00	0.00	0.00	0.14	0.86
		12/13/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.105	<0.24	<0.39	5.19	109.0	0.5	128	201	Fe	8.31	2	0.00	0.00	0.00	1.00	0.00
		5/29/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.0575	<0.24	<0.39	9.72	20.0	3.5	152	21.8	Fe	8.19	1	0.00	0.00	0.00	1.00	0.00
		12/9/2019	4.3	<0.200	<0.200	<0.200	<0.200	<0.200	<0.0200	<1.14	<1.23	--	--	2.20	170	5.96	Fe	35.56	0	0.00	0.00	0.00	0.00	0.00
		6/3/2020	4.8	<0.200	<0.200	<0.200	<0.200	<0.200	0.223	<0.24	<0.39	7.41	98.9	4.5 (e)	50.9	250	Fe	12.35	4	0.00	0.00	0.00	0.00	0.00
AGW251-2	SZ	12/2/2014	-0.8	<0.020	<0.2	2	0.2	<0.2	4.7	3.2	5.9	0.49	-141.9	4.0	1.1	8500	M	11.2	98	0.00	0.00	0.06	0.18	0.76
		8/14/2015	-0.1	<0.020	<0.2	<0.2	<0.2	<0.2	5.7	2.2	1.6	0.94	**	5.2	2.1	4800	M	7.1	91	0.00	0.00	0.00	0.41	0.59
		12/3/2015	0.2	<0.020	<0.2	<0.2	<0.2	<0.2	3.9	1.8	1.1	**	-109.1	6.0	1.2	3900	M	6.8	62	0.00	0.00	0.00	0.38	0.62
		3/3/2016	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	4.9	1.9	1.1	0.56	-99.13	1.5	1.9	2900	M	7.2	78	0.00	0.00	0.00	0.43	0.57
		6/20/2016	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	2.7	2.7	1.1	0.56	48.8	2.0	<1.0	3700	M	8.1	43	0.00	0.00	0.00	0.25	0.75
		9/8/2016	1.0	<0.2	<0.2	<0.2	<0.2	<0.2	1.8	2.6	1.3	0.73	-81.8	2.0	<1.0	3300	M	8.1	29	0.00	0.00	0.00	0.17	0.83
		12/2/2016	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	2.3	2.1	<1.0	1.09	-56.9	5.0	<1.0	2800	M	6.8	37	0.00	0.00	0.00	0.33	0.67
		3/7/2017	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	3.2	1.9	1.4	0.69	-80	5.5	<1.0	2500	M	7.3	51	0.00	0.00	0.00	0.31	0.69
		6/7/2017	1.8	<0.2	<0.2	<0.2	<0.2	<0.2	2.3	2.3	2.6	0.54	17.0	2.0	<1.0	3200	M	8.6	37	0.00	0.00	0.00	0.18	0.82
		9/6/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	1.6	2.4	1.7	0.55	-116.5	2.2	<1.2	3500	M	9.0	26	0.00	0.00	0.00	0.15	0.85
		12/1/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	1.4	2.0	1.8	2.66	-95.4	4.5	<1.2	2900	M	8.1	22	0.00	0.00	0.00	0.15	0.85
		6/8/2018	2.8	<0.20	<0.20	<0.20	<0.20	<0.20	1.1	2.5	2.3	0.99	102.4	4.5	<1.2	2200	M	9.1	18	0.00	0.00	0.00	0.10	0.90
		12/13/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.714	0.78	1.53	0.57	-29.7	3.4	0.127	2120	M	6.46	11	0.00	0.00	0.00	0.13	0.87
		5/29/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.724	<0.24	<0.39	0.63	-72.6	3.5	0.521	3030	M	7.00	12	0.00	0.00	0.00	1.00	0.00
		12/9/2019	4.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.649	0.98	2.09	0.23	-197.6	4.60	0.144	3020	M	6.25	10	0.00	0.00	0.00	0.09	0.91
		6/3/2020	4.8	<0.200	<0.200	<0.200	<0.200	<0.200	0.388	4.04	1.66	0.36	71.6	5.50	0.149	2100	M	6.45	6	0.00	0.00	0.00	0.03	0.97

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW251-3	IZ	12/2/2014	-0.8	<0.020	<0.2	5.9	0.5	<0.2	4.3	<1.0	1.2	1.09	-112.2	3.1	<1.0	2500	M	7.6	135	0.00	0.00	0.38	0.39	0.23
		8/14/2015	-0.1	<0.020	<0.2	3	0.2	<0.2	5	<1.0	<1.0	1.51	**	5.8	<1.0	2200	M	6.3	113	0.00	0.00	0.29	0.71	0.00
		12/3/2015	0.2	<0.020	<0.2	3.0	<0.2	<0.2	5.0	<1.0	<1.0	**	-93.7	6.0	<1.0	2100	M	6.1	111	0.00	0.00	0.28	0.72	0.00
		3/3/2016	0.5	<0.2	<0.2	1.2	<0.2	<0.2	7.8	<1.0	<1.0	0.59	-50.43	2.0	<1.0	2600	M	7.3	137	0.00	0.00	0.09	0.91	0.00
		6/20/2016	0.8	<0.2	<0.2	1.2	<0.2	<0.2	6.1	<1.0	<1.0	0.45	78.3	2.0	<1.0	2600	M	8.1	110	0.00	0.00	0.11	0.89	0.00
		9/8/2016	1.0	<0.2	<0.2	0.9	<0.2	<0.2	5.1	<1.0	<1.0	0.68	-38.6	3.5	<1.0	2100	M	6.7	91	0.00	0.00	0.10	0.90	0.00
		12/2/2016	1.2	<0.2	<0.2	1.2	<0.2	<0.2	6.8	<1.0	<1.0	1.05	-21.2	5.0	<1.0	2000	M	6.1	121	0.00	0.00	0.10	0.90	0.00
		3/7/2017	1.5	<0.2	<0.2	0.7	<0.2	<0.2	8.4	<1.0	<1.0	0.75	-50.8	5.0	<1.0	2100	M	7.2	142	0.00	0.00	0.05	0.95	0.00
		6/7/2017	1.8	<0.2	<0.2	0.6	<0.2	<0.2	6.6	<1.0	1.9	0.45	32.7	1.5	<1.0	2900	M	8.8	112	0.00	0.00	0.04	0.60	0.36
		9/6/2017	2.0	<0.20	<0.20	1.0	<0.20	<0.20	6.6	0.80	<0.57	0.47	-85.8	2.0	<1.2	2900	M	7.6	116	0.00	0.00	0.07	0.73	0.20
		12/5/2017	2.3	<0.20	<0.20	1.1	<0.20	<0.20	6.5	0.70	<0.57	2.93	-81.7	4.0	<1.2	3100	M	7.2	115	0.00	0.00	0.08	0.74	0.18
		3/13/2018	2.5	<0.20	<0.20	0.26	<0.20	<0.20	7.8	--	--	1.18	153.8	--	--	--	--	--	127	0.00	0.00	0.02	0.98	0.00
		6/8/2018	2.8	<0.20	<0.20	0.26	<0.20	<0.20	4.3	1.8	1.1	0.99	106.7	4.5	<1.2	2500	M	8.7	71	0.00	0.00	0.02	0.40	0.58
		9/4/2018	3.0	<0.20	<0.20	0.21	<0.20	<0.20	4.5	--	--	1.30	103.0	--	--	--	--	--	74	0.00	0.00	0.03	0.97	0.00
		12/13/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	4.99	0.84	0.70	0.36	-41.8	1.8	0.332	2260	M	6.33	80	0.00	0.00	0.00	0.60	0.40
		5/29/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	4.39	<0.24	<0.39	0.50	-32.9	4.5	0.190	3000	M	6.80	70	0.00	0.00	0.00	1.00	0.00
		12/9/2019	4.3	<0.200	<0.200	0.201	<0.200	<0.200	4.87	0.64	0.65	0.25	-235.2	3.60	<0.100	2250	M	5.97	80	0.00	0.00	0.02	0.63	0.36
		6/3/2020	4.8	<0.200	<0.200	<0.200	<0.200	<0.200	2.46	4.82	1.67	0.38	31.6	5.50	0.119	1990	M	6.41	39	0.00	0.00	0.00	0.15	0.85
AGW269	SZ	8/14/2015	-0.1	<0.020	<0.2	6.7	0.7	<0.2	3.2	<1.0	<1.0	0.52	-95.9	1.0	1.9	1300	M	9.1	128	0.00	0.00	0.60	0.40	0.00
		12/7/2015	0.3	<0.020	0.2	7.4	1.2	<0.2	5.1	<1.0	1.7	0.36	-49.0	4.0	<1.0	26000	M	122	172	0.00	0.01	0.39	0.36	0.25
		3/2/2016	0.5	<0.2	<0.2	6.5	1	<0.2	5.2	<1.0	2	0.27	-43.8	2.0	<1.0	15000	M	8.5	161	0.00	0.00	0.34	0.37	0.29
		6/16/2016	0.8	<0.2	<0.2	1.9	0.6	<0.2	8.7	<1.0	<2.3	0.36	-28.1	2.0	<1.0	24000	M	8.2	165	0.00	0.00	0.16	0.84	0.00
		9/7/2016	1.0	<0.2	<0.2	0.6	0.3	<0.2	6.4	1.3	<1.0	0.49	-21.7	4.0	<1.0	29000	M	9.9	112	0.00	0.00	0.06	0.65	0.29
		11/29/2016	1.2	<0.2	<0.2	0.3	0.3	<0.2	4.9	1.1	5.9	0.67	-7.5	7.0	<1.0	35000	M	9.6	85	0.00	0.00	0.02	0.24	0.74
		3/6/2017	1.5	<0.2	<0.2	0.3	0.2	<0.2	5.4	<1.0	4.6	0.59	-39.9	2.0	<1.0	23000	M	8.9	92	0.00	0.00	0.02	0.35	0.63
		6/1/2017	1.7	<0.2	<0.2	< 0.2	0.2	<0.2	2.3	1.5	11	0.50	2.7	3.5	<1.0	18000	M	8.8	39	0.00	0.00	0.00	0.08	0.92
		9/5/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	1.0	<0.80	2.3	1.16	-44.9	3.0	<1.2	28000	M	8.5	16	0.00	0.00	0.00	0.17	0.83
		11/29/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	0.97	<1.2	2.4	0.26	-31.8	2.6	<1.2	34000	M	8.5	16	0.00	0.00	0.00	0.16	0.84
		5/31/2018	2.7	<0.20	<0.20	<0.20	<0.20	<0.20	0.89	<0.40	3.7	1.14	103.5	4	<1.2	12000	M	8.5	14	0.00	0.00	0.00	0.10	0.90
		12/4/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.159	<0.24	<0.39	0.67	-11.3	5.00	<0.100	22000	M	7.53	3	0.00	0.00	0.00	1.00	0.00
		5/30/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.718	<0.24	1.77	0.53	-20.1	6.00	0.115	5710	M	7.65	11	0.00	0.00	0.00	0.16	0.84
		12/3/2019	4.2	<0.200	<0.200	<0.200	<0.200	<0.200	0.0696	<1.14	2.04	0.19	-177.8	4.60	0.681	12600	M	8.26	1	0.00	0.00	0.00	0.02	0.98
		5/26/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.744	<0.24	<0.39	0.83	95.8	1.80	0.137	2230	M	7.86	12	0.00	0.00	0.00	1.00	0.00

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Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW270	SZ	8/13/2015	-0.1	<0.020	<0.2	7.3	1	<0.2	2.2	<1.0	<1.0	1.58	**	5.8	<1.0	750	M	7.2	121	0.00	0.00	0.71	0.29	0.00
		12/7/2015	0.3	<0.020	1.7	10	1.7	<0.2	1.3	1.5	2.0	0.30	-11.0	2.5	<1.0	23000	M	682	154	0.00	0.05	0.44	0.08	0.44
		3/2/2016	0.5	<0.2	0.7	8.8	1	<0.2	1.7	<1.0	2.8	0.30	-38.6	6.5	<1.0	22000	M	75.2	134	0.00	0.02	0.45	0.12	0.41
		6/16/2016	0.8	<0.2	0.3	6	0.8	<0.2	2	<1.0	<2.0	0.60	-52.4	2.0	<1.0	25000	M	46.7	104	0.00	0.02	0.67	0.31	0.00
		9/7/2016	1.0	<0.2	<0.2	3.3	0.5	<0.2	2.9	1.0	<1.0	0.49	-47.9	3.0	1.1	22000	M	39.1	86	0.00	0.00	0.32	0.38	0.29
		11/28/2016	1.2	<0.2	<0.2	2.2	0.4	<0.2	3.2	1.4	<1.0	0.47	-26.2	5.0	<1.0	30000	M	38.7	78	0.00	0.00	0.21	0.40	0.39
		3/6/2017	1.5	<0.2	<0.2	1.3	0.3	<0.2	6.4	1.1	<1.0	0.46	-49.1	2.5	<1.0	29000	M	29.6	119	0.00	0.00	0.10	0.65	0.25
		6/2/2017	1.7	<0.2	<0.2	0.6	0.3	<0.2	6.1	2.1	<1.0	0.68	1.6	4.0	<1.0	23000	M	20.3	107	0.00	0.00	0.05	0.54	0.41
		9/7/2017	2.0	<0.20	<0.20	0.34	0.22	<0.20	6.3	<1.2	<1.7	0.66	-55.8	3.5	<1.2	30000	M	18	107	0.00	0.00	0.05	0.95	0.00
		11/28/2017	2.2	<0.20	<0.20	0.23	<0.20	<0.20	3.0	<1.2	<1.7	0.28	-10.6	3.6	<1.2	23000	M	17	50	0.00	0.00	0.05	0.95	0.00
		5/31/2018	2.7	<0.20	<0.20	<0.20	<0.20	<0.20	4.1	<1.2	3.7	6.84	113.8	3.5	<1.2	19000	M	12	66	0.00	0.00	0.00	0.35	0.65
		12/4/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	1.26	<0.24	<0.39	0.85	-5.3	2.00	<0.100	18200	M	10.96	20	0.00	0.00	0.00	1.00	0.00
		5/30/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	3.36	<0.37	1.32	0.33	-29.6	2.50	0.147	16900	M	10.35	54	0.00	0.00	0.00	0.55	0.45
		12/3/2019	4.2	<0.200	<0.200	<0.200	<0.200	<0.200	1.11	<1.14	1.37	0.19	-145.6	3.80	0.109	11000	M	10.30	18	0.00	0.00	0.00	0.28	0.72
		5/27/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	1.57	<0.24	<0.39	0.44	32.5	6.00	0.134	4400	M	9.18	25	0.00	0.00	0.00	1.00	0.00
AGW271	SZ	8/13/2015	-0.1	<0.020	<0.2	6.5	0.7	<0.2	4.6	<1.0	<1.0	1.32	**	6.2	<1.0	2300	M	6.8	148	0.00	0.00	0.50	0.50	0.00
		12/7/2015	0.3	<0.020	1.2	15	1.8	<0.2	5.9	1.2	1.9	0.33	22.2	7.0	<1.0	19000	M	971	277	0.00	0.02	0.45	0.25	0.28
		3/2/2016	0.5	<0.2	1.8	15	2.4	<0.2	2.8	1.5	3	0.37	25.8	6.0	<10.0	28000	M	1080	238	0.00	0.04	0.46	0.11	0.39
		6/16/2016	0.8	<0.2	0.3	6.9	0.7	<0.2	2	<1.0	<2.6	0.58	-35.8	3.0	<1.0	29000	M	48.6	113	0.00	0.02	0.70	0.28	0.00
		9/7/2016	1.0	<0.2	<0.2	4.4	0.5	<0.2	1.1	<1.0	<1.0	0.43	-39.5	2.5	<1.0	28000	M	16.9	68	0.00	0.00	0.74	0.26	0.00
		11/29/2016	1.2	<0.2	<0.2	2.5	0.5	<0.2	3.9	<1.0	<1.0	0.72	-25.5	8.0	<1.0	36000	M	14.0	93	0.00	0.00	0.33	0.67	0.00
		3/7/2017	1.5	<0.2	<0.2	0.6	<0.2	<0.2	3.3	<1.0	6.3	0.76	-54.6	3.0	<1.0	34000	M	15.0	59	0.00	0.00	0.02	0.20	0.78
		6/2/2017	1.7	<0.2	<0.2	0.3	<0.2	<0.2	1.7	<1.0	<1.0	0.56	1.6	2.5	<1.0	30000	M	14.1	30	0.00	0.00	0.10	0.90	0.00
		9/5/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.63	<1.2	<1.7	1.96	-60.1	3.0	<1.2	33000	M	13	10	0.00	0.00	0.00	1.00	0.00
		11/28/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	0.29	<1.2	<1.7	0.22	-43.6	3.8	<1.2	27000	M	14	5	0.00	0.00	0.00	1.00	0.00
		6/1/2018	2.7	<0.20	<0.20	<0.20	<0.20	<0.20	0.57	<0.40	3.4	0.89	125.6	3.5	<1.2	14000	M	13	9	0.00	0.00	0.00	0.07	0.93
		12/4/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.214	<0.24	<0.39	0.76	-8.0	4.00	<0.100	17600	M	10.39	3	0.00	0.00	0.00	1.00	0.00
		5/30/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.467	<0.24	2.23	0.47	-70.0	4.50	0.158	12100	M	13.71	7	0.00	0.00	0.00	0.09	0.91
		12/3/2019	4.2	<0.200	<0.200	<0.200	<0.200	<0.200	0.142	<1.14	2.00	0.21	-169.4	1.80	<0.100	8380	M	11.39	2	0.00	0.00	0.00	0.03	0.97
		5/26/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.677	<0.24	<0.39	0.26	50.8	1.90	0.124	6470	M	10.09	11	0.00	0.00	0.00	1.00	0.00

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW272	SZ	8/13/2015	-0.1	<0.020	0.2	7.3	0.6	<0.2	0.66	<1.0	<1.0	0.49	-55.2	1.8	1.5	400	Fe/S	5.4	94	0.00	0.02	0.87	0.11	0.00
		12/7/2015	0.3	<0.020	0.2	6.4	0.7	<0.2	1.8	<1.0	<1.0	1.36	-85.3	4.0	<1.0	940	M	3.5	104	0.00	0.01	0.71	0.28	0.00
		3/2/2016	0.5	<0.2	0.3	5.4	0.5	<0.2	1.2	<1.0	<1.0	0.91	-71.43	1.0	1.1	460	Fe/S	4.1	82	0.00	0.03	0.74	0.23	0.00
		6/17/2016	0.8	<0.2	0.3	4.9	0.6	<0.2	2	<1.0	<1.0	0.76	-29.8	2.5	1.4	450	Fe/S	4.1	91	0.00	0.03	0.62	0.35	0.00
		9/7/2016	1.0	<0.2	0.3	3.9	0.6	<0.2	2.3	<1.0	<1.0	0.42	-37.5	3.0	1.6	360	Fe/S	4.9	86	0.00	0.03	0.54	0.43	0.00
		11/28/2016	1.2	<0.2	0.4	6.0	0.7	<0.2	1.3	<1.0	<1.0	1.22	-19.0	5.0	<1.0	700	M	4.0	93	0.00	0.03	0.74	0.22	0.00
		3/6/2017	1.5	<0.2	0.4	5.5	0.6	<0.2	1.3	<1.0	<1.0	0.33	23.9	2.5	<1.0	500	M	4.3	87	0.00	0.04	0.73	0.24	0.00
		6/1/2017	1.7	<0.2	0.4	4.9	0.7	<0.2	1.4	<1.0	<1.0	0.89	0.2	2.0	1.7	440	Fe/S	4.3	83	0.00	0.04	0.69	0.27	0.00
		9/5/2017	2.0	<0.20	<0.20	3.5	0.65	<0.20	1.6	0.60	<0.57	3.19	-72.3	3.5	1.3	680	S/M	4.6	68	0.00	0.00	0.48	0.29	0.24
		11/28/2017	2.2	<0.20	0.29	4.6	0.52	<0.20	1.4	<0.40	<0.57	0.26	-43.6	1.8	<1.2	930	M	4.3	77	0.00	0.03	0.68	0.29	0.00
		6/1/2018	2.7	<0.20	0.32	3.7	0.51	<0.20	1.3	0.88	<0.57	0.99	123.6	5	2.7	410	Fe/S	4.8	67	0.00	0.02	0.44	0.21	0.32
		12/4/2018	3.3	<0.200	0.261	4.66	0.5	<0.200	1.76	<0.24	<0.39	0.47	-25.7	6.00	<0.100	1080	M	3.51	83	0.00	0.02	0.64	0.34	0.00
		5/30/2019	3.7	<0.200	0.323	3.22	0.507	<0.200	1.5	<0.30	<0.39	2.09	-20.9	4.00	0.410	841	M	4.10	65	0.00	0.04	0.59	0.37	0.00
		12/3/2019	4.2	<0.200	<0.200	1.67	0.439	<0.200	3.68	0.44	<1.23	0.18	-185.5	3.40	<0.100	1170	M	4.22	81	0.00	0.00	0.23	0.61	0.16
		5/27/2020	4.7	<0.200	0.311	2.63	0.394	<0.200	1.41	<0.24	<0.39	2.04	101.5	6.00	0.273	428	Fe/S	4.57	56	0.00	0.04	0.56	0.40	0.00
AGW273	SZ	8/13/2015	-0.1	<0.020	<0.2	6.3	0.7	<0.2	4.2	<1.0	<1.0	1.61	**	4.6	<1.0	880	M	6.1	139	0.00	0.00	0.52	0.48	0.00
		12/7/2015	0.3	<0.020	<0.2	3.4	0.6	<0.2	6.0	<1.0	<1.0	1.52	-99.3	6.0	<1.0	1500	M	6.0	137	0.00	0.00	0.30	0.70	0.00
		3/2/2016	0.5	<0.2	<0.2	3.5	0.5	<0.2	3.9	<1.0	<1.0	0.51	-54.3	1.2	<1.0	1300	M	6.1	104	0.00	0.00	0.40	0.60	0.00
		6/17/2016	0.8	<0.2	<0.2	2.9	5	<0.2	3.9	<1.0	<1.0	0.71	24.1	2.0	<1.0	1300	M	5.5	144	0.00	0.00	0.57	0.43	0.00
		9/7/2016	1.0	<0.2	<0.2	2.6	0.5	<0.2	4.2	<1.0	<1.0	0.77	-30.9	4.0	<1.0	900	M	6.7	99	0.00	0.00	0.32	0.68	0.00
		11/29/2016	1.2	<0.2	<0.2	2.4	0.5	<0.2	4.8	1.3	1.2	1.33	-26.6	6.0	<1.0	3600	M	6.4	107	0.00	0.00	0.16	0.40	0.45
		3/6/2017	1.5	<0.2	<0.2	2.6	0.4	<0.2	5	<1.0	<1.0	0.21	-10.9	4.5	<1.0	1200	M	6.4	111	0.00	0.00	0.28	0.72	0.00
		6/1/2017	1.7	<0.2	<0.2	2.5	0.5	<0.2	3.9	<1.0	<1.0	0.61	2.2	3.0	<1.0	1200	M	6.0	93	0.00	0.00	0.33	0.67	0.00
		9/5/2017	2.0	<0.20	<0.20	1.6	0.33	<0.20	4.0	0.95	<0.57	0.72	-64.9	2.2	<1.2	1300	M	6.0	84	0.00	0.00	0.17	0.54	0.29
		11/28/2017	2.2	<0.20	<0.20	0.84	0.29	<0.20	4.1	1.3	1.5	0.23	-39.2	2.8	<1.2	3300	M	6.3	77	0.00	0.00	0.07	0.38	0.55
		3/13/2018	2.5	<0.20	<0.20	1.7	0.37	<0.20	4.1	--	--	1.37	148.0	--	--	--	--	--	87	0.00	0.00	0.25	0.75	0.00
		6/1/2018	2.7	<0.20	<0.20	1.4	0.3	<0.20	3.3	1.5	1.2	0.53	120.5	4	<1.2	1100	M	6.3	70	0.00	0.00	0.11	0.32	0.57
		9/4/2018	3.0	<0.20	<0.20	1.1	0.32	<0.20	3.3	--	--	1.29	101.8	--	--	--	--	--	67	0.00	0.00	0.22	0.78	0.00
		12/5/2018	3.3	<0.200	<0.200	0.501	0.219	<0.200	3.09	<0.24	<0.39	0.47	-62.1	6.00	<0.100	3130	M	5.56	57	0.00	0.00	0.13	0.87	0.00
		5/31/2019	3.7	<0.200	<0.200	0.870	0.267	<0.200	3.18	1.17	0.83	0.59	61.0	5.50	0.129	1880	M	6.09	63	0.00	0.00	0.09	0.39	0.53
		12/4/2019	4.3	<0.200	<0.200	0.209	<0.200	<0.200	2.00	0.78	1.98	0.31	-211.7	3.60	0.120	4160	M	6.53	34	0.00	0.00	0.02	0.25	0.73
		5/27/2020	4.7	<0.200	<0.200	0.385	<0.200	<0.200	2.12	<0.24	<0.39	0.38	49.8	6.00	0.130	1140	M	6.24	38	0.00	0.00	0.10	0.90	0.00

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
AGW274	SZ	8/13/2015	-0.1	<0.020	<0.2	<0.2	<0.2	<0.2	4	2.3	<1.0	0.54	-36.6	3.6	<1.0	1900	M	7.5	64	0.00	0.00	0.00	0.44	0.56
		12/7/2015	0.3	<0.020	<0.2	<0.2	<0.2	<0.2	1.9	1.3	2.2	2.07	-95.0	4.0	<1.0	2700	M	8.1	30	0.00	0.00	0.00	0.20	0.80
		3/2/2016	0.5	<0.2	<0.2	2	0.4	<0.2	5.5	<1.0	<1.0	0.43	-48.9	2.0	<1.0	920	M	7	113	0.00	0.00	0.22	0.78	0.00
		6/17/2016	0.8	<0.2	<0.2	0.6	0.3	<0.2	4.6	1.5	<1.0	0.47	-5.1	2.0	<1.0	920	M	5.8	83	0.00	0.00	0.07	0.54	0.39
		9/8/2016	1.0	<0.2	<0.2	<0.2	<0.2	<0.2	1.1	1.6	3.6	1.05	-33.1	2.8	<1.0	9600	M	7	18	0.00	0.00	0.00	0.09	0.91
		11/29/2016	1.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.7	1.6	4.6	0.83	-23.7	5.5	<1.0	13000	M	8.2	11	0.00	0.00	0.00	0.05	0.95
		3/6/2017	1.5	<0.2	<0.2	0.6	<0.2	<0.2	4.4	1.1	1.0	0.25	-27.3	1.5	<1.0	1500	M	7.6	77	0.00	0.00	0.04	0.47	0.49
		6/1/2017	1.7	<0.2	<0.2	1.9	0.4	<0.2	4.5	<1.0	<1.0	0.58	6.1	2.0	<1.0	700	M	6.7	96	0.00	0.00	0.25	0.75	0.00
		9/5/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.43	0.79	4.4	2.22	-55.9	4.3	<1.2	5300	M	6.9	7	0.00	0.00	0.00	0.04	0.96
		11/28/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	<0.40	4.6	0.46	-41.3	3.8	<1.2	12000	M	7.8	3	0.00	0.00	0.00	0.02	0.98
		6/1/2018	2.7	<0.20	<0.20	0.82	0.2	<0.20	3.2	1.5	1.5	0.55	117.5	4	<1.2	870	M	7.1	62	0.00	0.00	0.06	0.31	0.63
		12/5/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.116	<0.24	<0.39	0.55	-63.3	6.50	<0.100	7640	M	7.11	2	0.00	0.00	0.00	1.00	0.00
		5/31/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	1.82	0.57	1.47	0.51	85.1	5.00	0.152	1910	M	6.59	29	0.00	0.00	0.00	0.30	0.70
		12/4/2019	4.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.0957	<1.14	1.94	0.25	-209.5	3.60	<0.100	7040	M	9.64	2	0.00	0.00	0.00	0.02	0.98
		5/27/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	1.98	<0.24	<0.39	0.42	85.1	6.50	0.137	1350	M	6.43	32	0.00	0.00	0.00	1.00	0.00
AGW275	SZ	8/13/2015	-0.1	<0.020	<0.2	2.3	0.3	<0.2	7.7	<1.0	<1.0	0.64	-47.6	3.0	1	2000	M	7.6	150	0.00	0.00	0.18	0.82	0.00
		12/7/2015	0.3	<0.020	<0.2	2.5	0.3	<0.2	7.7	<1.0	<1.0	1.02	-100.3	4.5	<1.0	2100	M	6.9	152	0.00	0.00	0.19	0.81	0.00
		3/2/2016	0.5	<0.2	<0.2	0.6	<0.2	<0.2	7.7	2.2	1.6	0.35	-48.5	2.2	<1.0	14000	M	79.7	129	0.00	0.00	0.02	0.47	0.50
		6/17/2016	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	0.16	2.8	4.5	0.44	0.07	3.5	<1.0	26000	M	7.9	3	0.00	0.00	0.00	0.01	0.99
		9/8/2016	1.0	<0.2	<0.2	<0.2	<0.2	<0.2	0.061	<1.0	5.8	0.46	-45.3	2.0	<1.0	16000	M	8.3	1	0.00	0.00	0.00	0.01	0.99
		11/29/2016	1.2	<0.2	<0.2	<0.2	0.2	<0.2	0.055	<1.0	6.5	0.60	-30.4	7.0	<1.0	16000	M	4.1	3	0.00	0.00	0.01	0.00	0.99
		3/6/2017	1.5	<0.2	<0.2	<0.2	<0.2	<0.2	0.057	<1.0	5.1	0.20	-44.9	2.0	<1.0	14000	M	8.5	1	0.00	0.00	0.00	0.01	0.99
		6/1/2017	1.7	<0.2	<0.2	<0.2	<0.2	<0.2	0.053	<1.0	9.6	0.52	0.3	1.0	<1.0	17000	M	8.1	1	0.00	0.00	0.00	0.00	1.00
		9/5/2017	2.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.047	<0.40	4.1	0.67	-58.5	1.8	<1.2	9500	M	7.8	1	0.00	0.00	0.00	0.01	0.99
		11/29/2017	2.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	4.7	0.27	-47.5	3.8	<1.2	7300	M	8.0	0	0.00	0.00	0.00	0.00	1.00
		6/1/2018	2.7	<0.20	<0.20	<0.20	<0.20	<0.20	<0.020	<0.40	4.1	0.7	120	3	<1.2	8100	M	8.7	0	0.00	0.00	0.00	0.00	1.00
		12/5/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.0295	<0.24	<0.39	0.45	-65.4	6.00	<0.100	2830	M	6.06	0	0.00	0.00	0.00	1.00	0.00
		5/31/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.0260	<0.24	2.65	0.39	93.5	5.50	0.317	4390	M	7.55	0	0.00	0.00	0.00	0.00	1.00
		12/4/2019	4.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.0266	<1.14	2.29	0.18	-205.9	4.60	<0.100	2130	M	6.69	0	0.00	0.00	0.00	0.01	0.99
		5/26/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.0220	<0.24	<0.39	0.43	49.1	4.2 (f)	0.122	2810	M	7.34	0	0.00	0.00	0.00	1.00	0.00
IW33	SZ	8/13/2015	-0.1	<0.020	<0.2	6.6	0.8	<0.2	3	<1.0	<1.0	1.86	-17.1	2.6	<1.0	940	M	7.4	124	0.00	0.00	0.61	0.39	0.00
		11/28/2016	1.2	--	--	--	--	--	--	--	--	**	38.3	--	--	--	--	205	--	--	--	--	--	--

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
IW34	SZ	8/17/2015	0.0	<0.020	0.2	7.6	0.8	<0.2	4.9	<1.0	<1.0	0.57	-60.2	4.0	<1.0	1900	M	6.9	167	0.00	0.01	0.52	0.47	0.00
		12/7/2015	0.3	<0.10	1.6	8.5	1.2	<0.2	1.1	2.9	1.7	1.79	-24.7	9.5	22.5	7900	S/M	6010	130	0.00	0.04	0.35	0.06	0.55
		3/2/2016	0.5	<0.2	5.3	16	2.5	<0.2	1.1	3	2.7	0.39	44.1	7.0	<10.0	15000	M	6450	249	0.00	0.09	0.43	0.04	0.44
		6/16/2016	0.8	<0.2	5.4	16	2.2	<0.2	0.9	3.8	2.2	1.07	116	3.0	1.9	23000	M	3840	243	0.00	0.09	0.42	0.03	0.46
		9/7/2016	1.0	<0.2	1.9	7.4	0.8	<0.2	0.34	1.5	<1.0	0.46	-85.3	6.0	1.1	17000	M	377	104	0.00	0.09	0.54	0.03	0.34
		11/28/2016	1.2	<2.0	<2.0	6.1	<2.0	<2.0	0.31	<1.0	<1.0	0.50	-69.7	7.0	<1.0	24000	M	259	68	0.00	0.00	0.93	0.07	0.00
		3/6/2017	1.5	<0.040 (a)	0.16 (a)	3.6	<2.0	<0.040 (a)	1.2	1.1	<1.0	0.89	-38.9	4.5	<1.0	24000	M	88	58	0.00	0.01	0.38	0.20	0.41
		6/1/2017	1.7	<0.2	<0.2	1.7	0.4	<0.2	2.2	2.4	< 1.0	0.53	28.3	1.0	<1.0	30000	M	36.6	58	0.00	0.01	0.15	0.25	0.60
		9/5/2017	2.0	<0.20	<0.20	1.0	<0.20	<0.20	2.0	<1.2	<1.7	1.26	-16.3	4.5	<1.2	27000	M	37	42	0.00	0.00	0.24	0.76	0.00
		11/28/2017	2.2	<0.20	<0.20	0.85	<0.20	<0.20	1.1	<1.2	<1.7	0.45	8.1	3.0	<1.2	27000	M	46	26	0.00	0.00	0.33	0.67	0.00
		5/31/2018	2.7	<0.20	<0.20	0.34	<0.20	<0.20	2.6	<1.2	2.9	1.35	121.9	5.0	<1.2	24000	M	32	45	0.00	0.00	0.02	0.29	0.68
		12/4/2018	3.3	<0.200	<0.200	0.272	<0.200	<0.200	0.67	<0.24	<0.39	0.52	-2.7	4.00	<0.100	23300	M	46.99	14	0.00	0.00	0.21	0.79	0.00
		5/30/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	3.90	<0.27	<0.61	0.51	-4.2	4.50	0.158	24800	M	12.63	62	0.00	0.00	0.00	1.00	0.00
		12/3/2019	4.2	<0.200	<0.200	0.269	<0.200	<0.200	0.568	<1.14	0.94	0.23	-192.4	3.80	0.114	17200	M	21.05	12	0.00	0.00	0.06	0.21	0.72
		5/26/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	3.090	<0.24	<0.39	0.90	73.3	1.90	0.139	11400	M	9.73	49	0.00	0.00	0.00	1.00	0.00
IW35	SZ	8/17/2015	0.0	<0.020	<0.2	3.3	0.5	<0.2	3.7	<1.0	<1.0	0.77	-22.8	2.0	1	1800	M	7.2	98	0.00	0.00	0.40	0.60	0.00
		11/28/2016	1.2	--	--	--	--	--	--	--	--	0.76	0.7	--	--	--	--	16.3	--	--	--	--	--	--
IW36	SZ	8/17/2015	0.0	<0.020	0.2	3.3	0.7	<0.2	6	<1.0	<1.0	0.58	-29.5	2.8	<1.0	1700	M	7.6	139	0.00	0.01	0.30	0.69	0.00
		12/7/2015	0.3	<0.020	<1.0	1.6	<1.0	<1.0	3.8	<1.0	1.4	1.77	-100.2	6.0	<1.0	17000	M	63.7	77	0.00	0.00	0.13	0.49	0.38
		3/2/2016	0.5	<0.2	<0.2	1.5	0.4	<0.2	5.7	<1.0	2	0.32	-47.58	1.5	<1.0	14000	M	17.9	111	0.00	0.00	0.11	0.51	0.38
		6/16/2016	0.8	<0.2	<0.2	1.5	0.4	<0.2	4.5	<1.0	1.9	0.36	-7.85	1.0	<1.0	11000	M	11.4	92	0.00	0.00	0.13	0.47	0.41
		9/7/2016	1.0	<0.2	<0.2	1.7	0.4	<0.2	4.3	<1.0	1.8	0.35	-27.8	4.5	<1.0	6600	M	11.2	90	0.00	0.00	0.14	0.46	0.40
		11/28/2016	1.2	<0.2	<0.2	1.7	0.4	<0.2	4.8	<1.0	1.2	0.87	-8.2	6.0	<1.0	2900	M	10.1	98	0.00	0.00	0.16	0.56	0.29
		3/6/2017	1.5	<0.2	<0.2	1.3	0.4	<0.2	6.1	<1.0	<1.0	0.71	-38.9	1.5	<1.0	2500	M	10.8	115	0.00	0.00	0.15	0.85	0.00
		6/1/2017	1.7	<0.2	<0.2	1.3	0.4	<0.2	5.5	<1.0	2.0	0.36	5.9	1.5	<1.0	2800	M	10.3	106	0.00	0.00	0.10	0.51	0.39
		9/5/2017	2.0	<0.20	<0.20	0.36	0.23	<0.20	5.0	<0.40	1.7	0.69	-54.3	2.4	<1.2	2600	M	9.2	86	0.00	0.00	0.04	0.56	0.40
		11/29/2017	2.2	<0.20	<0.20	0.26	0.21	<0.20	4.9	0.41	1.3	0.34	-29.3	1.8	<1.2	2400	M	9.2	83	0.00	0.00	0.03	0.56	0.41
		3/13/2018	2.5	<0.20	<0.20	0.39	0.30	<0.20	6.2	--	--	1.20	155.5	--	--	--	--	--	106	0.00	0.00	0.07	0.93	0.00
		5/31/2018	2.7	<0.20	<0.20	0.22	0.23	<0.20	3.3	1.2	2.2	0.65	106.2	4	<1.2	1900	M	9.8	57	0.00	0.00	0.03	0.30	0.67
		9/4/2018	3.0	<0.20	<0.20	<0.20	<0.20	<0.20	2.0	--	--	5.85	109.6	--	--	--	--	--	32	0.00	0.00	0.00	1.00	0.00
		12/4/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	2.65	<0.24	<0.39	0.51	-8.7	5.50	<0.100	2410	M	8.24	42	0.00	0.00	0.00	1.00	0.00
		5/30/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	2.92	<0.36	1.16	0.43	-13.3	3.50	0.114	1830	M	8.57	47	0.00	0.00	0.00	0.55	0.45
		12/3/2019	4.2	<0.200	<0.200	<0.200	<0.200	<0.200	1.71	0.48	1.24	0.18	-187.7	3.00	0.15	2290	M	8.87	27	0.00	0.00	0.00	0.32	0.68
		5/26/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	1.54	<0.24	<0.39	0.44	115.2	1.70	0.148	1690	M	8.57	25	0.00	0.00	0.00	1.00	0.00

Table 2-1
Data Summary
Algona Bioremediation Pilot Test
Boeing Auburn Facility

Well	Aquifer Zone	Date	Elapsed Time from Injection (years)	Volatile Organic Compounds								Aquifer Redox Conditions						Donor Indicators	Total cVOC (nmol/L)	Molar Fraction				
				PCE (µg/L)	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	11DCE (µg/L)	VC (µg/L)	Ethene (µg/L)	Ethane (µg/L)	DO (mg/L)	ORP (mV)	Iron II (mg/L)	Sulfate (mg/L)	Methane (µg/L)	Aquifer Redox State	TOC (mg/L)		PCE	TCE	Total DCE	VC	Ethene+ Ethane
IW37	SZ	8/13/2015	-0.1	<0.020	<0.2	5.3	0.5	<0.2	4.9	<1.0	<1.0	0.56	-45	2.0	<1.0	1800	M	6.6	138	0.00	0.00	0.43	0.57	0.00
		12/7/2015	0.3	0.16	1.3	13	2.0	<0.2	1.5	5.8	3.1	1.40	-24.2	9.0	6.6	3800	M	4780	190	0.00	0.02	0.31	0.05	0.62
		3/2/2016	0.5	<0.2	0.8	7.7	1.0	<0.2	1.2	1.8	2.2	0.47	35.1	5.0	<10.0	23000	M	2480	115	0.00	0.02	0.36	0.08	0.54
		6/17/2016	0.8	<0.2	0.3	6	0.3	<0.2	0.4	<1.0	1.6	0.91	-81.5	2.5	<1.0	20000	M	1130	74	0.00	0.02	0.51	0.05	0.42
		9/7/2016	1.0	<0.2	<0.2	2.7	<0.2	<0.2	0.14	<1.0	<1.0	0.91	-123.4	5.0	1.3	17000	M	337	30	0.00	0.00	0.93	0.07	0.00
		11/28/2016	1.2	<0.2	<0.2	2.7	<0.2	<0.2	0.062	<1.0	<1.0	0.67	-106.8	7.0	<1.0	25000	M	356	29	0.00	0.00	0.97	0.03	0.00
		3/7/2017	1.5	<0.2	<0.2	2.5	<0.2	<0.2	0.17	<1.0	<1.0	0.74	-104.3	2.0	<1.0	27000	M	180	29	0.00	0.00	0.90	0.10	0.00
		6/1/2017	1.7	<0.2	<0.2	1.8	<0.2	<0.2	0.38	2.6	< 1.0	0.66	-49.3	4.5	<1.0	31000	M	87.6	25	0.00	0.00	0.16	0.05	0.79
		9/5/2017	2.0	<0.20	<0.20	0.80	<0.20	<0.20	1.3	<1.2	<1.7	0.88	-71.9	3.0	<1.2	31000	M	59	29	0.00	0.00	0.28	0.72	0.00
		11/28/2017	2.2	<0.20	<0.20	0.53	<0.20	<0.20	0.91	<1.2	<1.7	0.19	-40.3	3.6	<1.2	42000	M	48	20	0.00	0.00	0.27	0.73	0.00
		3/13/2018	2.5	<0.20	<0.20	0.36	<0.20	<0.20	1.3	--	--	1.27	157.1	--	--	--	--	--	25	0.00	0.00	0.15	0.85	0.00
		5/31/2018	2.7	<0.20	<0.20	0.22	<0.20	<0.20	0.98	<1.2	3.3	0.52	83.9	4.0	<1.2	21000	M	20	18	0.00	0.00	0.02	0.12	0.86
		9/4/2018	3.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.42	--	--	1.04	108.6	--	--	--	--	--	7	0.00	0.00	0.00	1.00	0.00
		12/5/2018	3.3	<0.200	<0.200	<0.200	<0.200	<0.200	0.309	<0.24	<0.39	0.42	-70.1	6.50	<0.100	23900	M	18.89	5	0.00	0.00	0.00	1.00	0.00
		5/30/2019	3.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.466	<0.24	1.65	0.44	-38.2	5.50	0.132	12200	M	9.93	7	0.00	0.00	0.00	0.12	0.88
		12/3/2019	4.2	<0.200	<0.200	<0.200	<0.200	<0.200	0.285	<1.14	2.09	0.18	-188.2	2.60	<0.100	16200	M	13.73	5	0.00	0.00	0.00	0.06	0.94
		5/26/2020	4.7	<0.200	<0.200	<0.200	<0.200	<0.200	0.801	<0.24	<0.39	0.30	42.9	1.70	0.116	3090	M	6.77	13	0.00	0.00	0.00	1.00	0.00

Notes:

Blue shading indicates the compound with highest molar fraction per event
Electron donor injection performed August 18 through September 4, 2015
Acetylene was monitored from August 2015 through December 2016. There were no detections of this constituent; therefore, sampling was discontinued and it has been removed from this table.
Methane, Ethene, and Ethane values are reported to the method detection limit and non-detect values are presented as less than the method detection limit.
The number of significant figures and reporting limits have varied throughout the analysis period due to changes in laboratory reporting.
Total DCE is the sum of cDCE, tDCE, and 11DCE
Bubbly = Large surface bubbles (apparent surfactant)
Effervescent = Small suspended bubbles (dissolved gases)
(a) Results presented are from analysis by Method 8260C SIM. Samples were reanalyzed by Method 8260C SIM in order to meet data quality objectives due to elevated reporting limits (2.0 µg/L) in the Method 8260C run.
(b) Iron was measured on December 14, 2017.
(c) Iron was measured on November 28, 2017.
(d) Iron was measured on June 3, 2020.
(e) Iron was measured on June 5, 2020.
(f) Iron was measured on May 28, 2020.

Abbreviations/Acronyms:
Fe = Iron-reducing
M = Methanogenic
S = Sulfate-reducing
IZ = Intermediate Zone
SZ = Shallow Zone
WT = Water Table Zone

Units/Analytical Results
-- = not applicable/not analyzed
** = Instrument Error
µg/L = micrograms per liter
µmol/L = micromoles per liter
mg/L = micrograms per liter
mV = millivolt
nmol/L = nanomole per liter

Chemicals
11DCE = 1,1-dichloroethene
cDCE = cis-1,2-dichlorethene
cVOC = chlorinated volatile organic compounds
DO = dissolved oxygen
ORP = oxygen-reduction potential
PCE = tetrachloroethene
tDCE = trans-1,2-dichloroethene
TCE = trichloroethene
VC = vinyl chloride

ATTACHMENT 3

Laboratory Data Packages
(only included in final hard copy on DVD)