



April 15, 2019

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

Attn: Robin Harrover

Transmitted via email to: *rhar461@ecy.wa.gov*

**Re: Status Report No. 66, January through March 2019 Activity Period
Boeing Auburn Facility
WAD 041337130, RCRA Corrective Action Agreed Order No. 01HWTRNR-3345
Auburn, Washington
Project No. 0025164.170.501**

Dear Ms. Harrover:

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, The Boeing Company (Boeing) is providing Status Report No. 66, which covers the 3-month activity period of January through March 2019.

References

1. January 15, 2019. Letter: Status Report No. 65, October Through December 2018 Activity Period, Boeing Auburn Facility, WAD 041337130, RCRA Corrective Action Agreed Order No. 01HWTRNR-3345, Auburn, Washington. From Jennifer Wynkoop and Sarah Fees, Landau Associates, Inc. To Robin Harrover, Washington State Department of Ecology.
2. January 22, 2019. Ecology Listserv. Drop in to find out about the groundwater cleanup – February 7, Auburn Library or February 27, Algona City Hall.
3. January 31, 2019. Letter: Groundwater and Surface Water Monitoring Results: September and December 2018, City of Algona Wells, Algona, Washington. From Jennifer Wynkoop, Landau Associates, Inc. To Mayor David Hill, City of Algona.
4. February 1, 2019. Revised Letter: Status Report No. 65, October Through December 2018 Activity Period, Boeing Auburn Facility, WAD 041337130, RCRA Corrective Action Agreed Order No. 01HWTRNR-3345, Auburn, Washington. From Jennifer Wynkoop and Sarah Fees, Landau Associates, Inc. To Robin Harrover, Washington State Department of Ecology.
5. February 5, 2019. Ecology Listserv. See you on Thursday – Ecology is hosting a Boeing Auburn cleanup Informational drop-in at the Auburn Library.
6. February 7, 2019. Draft Letter: Ecology cleanup standards identified for Trichloroethylene (TCE) and breakdown chemicals in groundwater; FS #2018; CS #5049; EPA ID #WAD041337130. From Robin Harrover, Washington State Department of Ecology. To Carl Bach, The Boeing Company.

7. February 8, 2019. Letter: 2017/2018 Feasibility Study Data Submittal – Additional Work at Building 17-06, Boeing Auburn Facility, Auburn, Washington. From Jennifer Wynkoop, Landau Associates, Inc. To Robin Harrover, Washington State Department of Ecology.
8. February 13, 2019. Agency Review Draft Technical Memorandum: Phase 9 Interim Groundwater Monitoring Program, Boeing Auburn Facility, Auburn, Washington. From Jennifer Wynkoop, Landau Associates, Inc. To Robin Harrover, Washington State Department of Ecology.
9. February 19, 2019. Email: Boeing Fabrication Auburn Site – Status Report 65, Oct – Dec 2018 Activity Period. From Robin Harrover, Washington State Department of Ecology. To representatives of City of Algona, City of Auburn, and City of Pacific.
10. February 19, 2019. Letter: Former Building 17-03 Additional Field Activities Data Submittal, Feasibility Study – Boeing Auburn Facility, Auburn, Washington. From Sarah Fees and Jennifer Wynkoop, Landau Associates, Inc. To Robin Harrover, Washington State Department of Ecology.
11. February 25, 2019. Ecology Listserv. Ask Ecology on February 27 at Algona City Hall Community Center.
12. February 28, 2019. Email: Ecology Approval of proposed Phase 9 Groundwater Monitoring Plan, dated 13 Feb 2019. From Robin Harrover, Washington State Department of Ecology. To Sarah Fees, Landau Associates, Inc.
13. February 28, 2019. Letter: Ecology cleanup standards identified for Trichloroethylene (TCE) and breakdown chemicals in groundwater; FS #2018; CS #5049; EPA ID #WAD041337130. From Robin Harrover, Washington State Department of Ecology. To Carl Bach, The Boeing Company.
14. March 6, 2019. Letter: Re: Ecology cleanup standards identified for Trichloroethylene and breakdown chemicals in groundwater; FS #2018; CS #5049; EPA ID #WAD041337130. From Carl Bach, The Boeing Company. To Robin Harrover, Washington State Department of Ecology.
15. March 13, 2019. Project Meeting: CULs and Site-Wide NA Assessment Report Discussion. Ecology NWRO: Robin Harrover and Christa Colouzis, Ecology; Jeremy Porter, Aspect Consulting; Carl Bach and Debbie Taege, The Boeing Company; and Jennifer Wynkoop and Sarah Fees, Landau Associates, Inc.
16. March 25, 2019. Letter: Department of Ecology’s (Ecology) Comments Regarding the Draft Site-Wide Natural Attenuation Assessment Report; Prepared for the Boeing Company by Landau Associates, Inc.; May 25, 2018; FS #2018; CS #5049; EPA WAC041337130. From Robin Harrover, Washington State Department of Ecology. To Debbie Taege, The Boeing Company.
17. March 29, 2019. Email: Boeing Auburn – Phase 9 GWMP. From Debbie Taege, The Boeing Company. To Robin Harrover, Washington State Department of Ecology.

Work Conducted

General Site-wide Corrective Action Activities

On January 15, 2019, LAI submitted Status Report No. 65 regarding fourth quarter 2018 activities to Ecology and other stakeholders¹ for their records (Reference #1). A laboratory error was identified in groundwater data included in the report and a revised copy of Status Report No. 65 was submitted on

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 #9).

February 1, 2019 (Reference #4). Ecology project manager, Robin Harrover, continued to attend regularly scheduled monthly conference calls with Boeing, Landau Associates, Inc. (LAI), and the City of Algona's environmental consultant, ICF International (ICF). The primary purpose of these calls is to discuss technical aspects of the project scope and schedule, data results, and public outreach. Boeing and Washington State Department of Ecology (Ecology) communication personnel also attend these calls.

As part of the offsite monitoring well access agreement and right-of-way (ROW) permits, Boeing provides groundwater data submittals to stakeholders. Currently, all groundwater data submittals are provided annually, except for the submittal to the City of Algona, which is provided semiannually. Data for the third quarter (September 2018) and fourth quarter (December 2018) sampling events from the Chicago Avenue ditch and the 35 groundwater monitoring wells on City of Algona ROW was distributed to the City of Algona on January 31, 2019 (Reference #3).

Groundwater and Chicago Avenue Ditch Water Sampling

A draft of the Phase 9 Groundwater Monitoring Plan was sent to Ecology on February 13, 2019 (Reference #8). Ecology provided comments and approval of the proposed Phase 9 plan on February 28, 2019 (Reference #12). Boeing had a question about Ecology's comments on sampling wells in Building 17-06 and requested clarification (Reference #17). Once Boeing receives Ecology's response, Boeing will update and finalize the Phase 9 Groundwater Monitoring Plan. The Phase 9 plan included a proposal to discontinue quarterly groundwater sampling. Since this plan was approved by Ecology prior to the March quarterly sampling event, no March groundwater sampling was completed.

Sampling occurs at one location (SW-CD4) in the Chicago Avenue ditch semiannually. Chicago Avenue ditch water sampling was completed on March 5, 2019 and the analytical data are provided in Table 1-1 of Attachment 1. The Chicago Avenue ditch sampling location along with the annual stormwater and surface water sampling locations are shown on Figure 1-1 of Attachment 1. The laboratory data package is provided in Attachment 2.

Feasibility Study Investigation and Reporting

Boeing is continuing work on the feasibility study (FS) and associated reporting. Boeing submitted the final FS work plan in the fourth quarter 2018 and expects to receive Ecology approval and a schedule for FS report submittal. Determining final cleanup levels for the Boeing Auburn site is integral to completing the FS report and discussion of appropriate cleanup levels is ongoing between Boeing and Ecology. Ecology provided a draft letter describing cleanup standards identified for TCE and vinyl chloride in groundwater on February 7, 2019 (Reference #6) and a final version of the letter on February 28, 2019 (Reference #13). Boeing sent a response to this letter on March 6, 2019 (Reference #14). Boeing and Ecology had a meeting to discuss cleanup levels on March 13, 2019 (Reference #15) and are continuing to work on coming to agreement on final cleanup levels applicable to the Boeing Auburn site.

In the first quarter 2019, Boeing provided a number of FS data submittals to Ecology. Results of the additional Building 17-06 investigation activities completed in December 2017 and January 2018 and additional analyses completed on oil, groundwater and soil from Building 17-06 were summarized in a data submittal and provided to Ecology on February 8, 2019 (Reference #7). A data submittal summarizing field investigation activities completed at Former Building 17-03 in the fourth quarter 2018 was sent to Ecology on February 19, 2019 (Reference #10). Boeing anticipates providing Ecology with a data submittal of cyanide results associated with AOC A-09 in the second quarter 2019.

Other Reporting

Boeing submitted a draft Site-Wide Natural Attenuation Assessment Report in May 2018. Boeing and Ecology discussed this report during the meeting on March 13, 2019 (Reference #15). Ecology provided comments on this report on March 25, 2019 (Reference #16). Boeing is updating this report based on Ecology comments and plans to submit a revised report in the second quarter 2019.

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 field work 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, as needed. Ecology organized two drop-in sessions in Auburn and Algona in February 2019 and posted notifications about the sessions to the Ecology listserv (References #2, #5, and #11).

Building 17-06 Ongoing Monitoring

Boeing is monitoring for petroleum hydrocarbons in wells AGW128, AGW277, and AGW281 located in Building 17-06. During the first quarter, free-phase product was detected in well AGW128 in February and March (0.02 and 0.15 ft respectively), no product was detected in January. Free-phase product has not been detected in any of the other wells in Building 17-06. Boeing maintains a sorbent sock in AGW128, which is changed out approximately monthly.

Occurrence of Problems

None to report.

Projected Work for Next Reporting Period April through June 2019

Activities projected for the next reporting period pertain to the FS reporting, Algona pilot test, other reporting, and ongoing monitoring of groundwater. Tasks during second quarter 2019 are expected to include:

- Finalizing the Algona Pilot Test TM (2nd year of monitoring update) once Ecology comments are received.
- Providing a revised Site-Wide Natural Attenuation Report based on Ecology comments.

- Providing Ecology with a data submittal summarizing cyanide analysis and results associated with AOC A-09.
- Continuing preparation of the FS report.
- Continuing negotiation with Ecology on Site cleanup levels.
- Finalizing the Phase 9 Groundwater Monitoring Plan.
- Continuing to monitor free-phase product in groundwater at Building 17-06.
- Conducting annual groundwater sampling in June 2019.

Other Significant Findings, Changes, and Contacts

Boeing is in the process of transitioning project managers. Carl Bach from Boeing will be transitioning project management responsibilities to Debbie Taege in April 2019. In January 2019, Ecology also added Christa Colouzis to the team, who, as Ecology's Corrective Action Unit Supervisor, is providing oversight for the project.

* * * * *

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
Senior Geologist



Jennifer Wynkoop
Principal Scientist

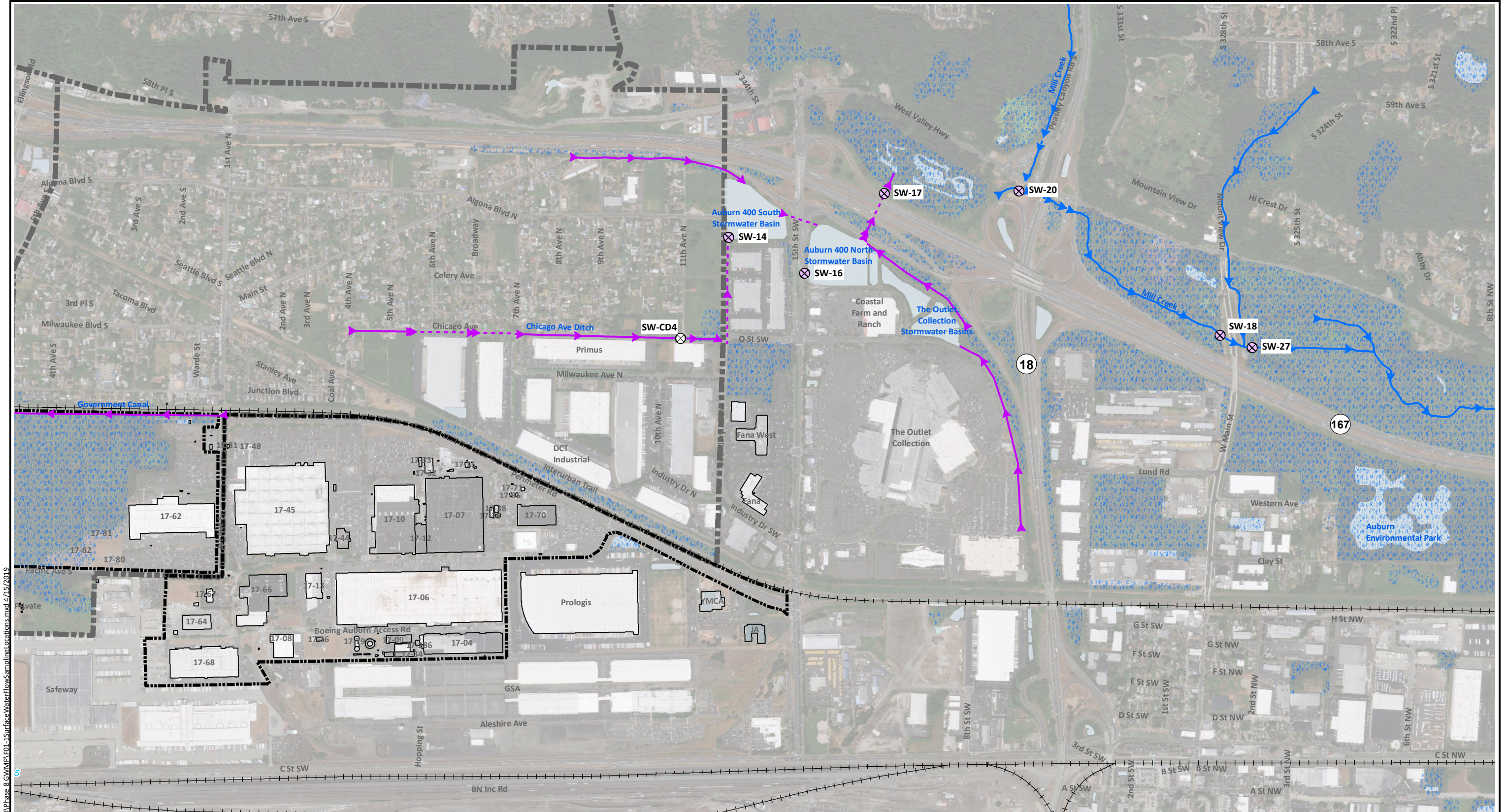
KMG/SEF/JWW/tam

\\TACOMA3\Project\025\164\R\Quarterly Progress Rpts\2019\1Q2019\1Q2019 Status Rpt No. 66 Draft Ltr Rpt_040819.docx

cc: Carl Bach, Boeing (email only)
Debbie Taege (email only)
Thomas MacMannis, Boeing (email only)
Kamara Sams, Boeing (email only)
James Swortz, Boeing (email only)
Kathryn Moxley, Boeing (email only)
Patrick McCabe, Boeing Realty (email only)
Janet Frentzel, Prologis (email only)
Kim Lemon, Prologis (email only)
Brett Richer, Prologis (email only)
Steve Campbell, Prologis (email only)
Jason Berry, YMCA Auburn (email only)
Christa Colouzis, Ecology (email only)

Attachments: Attachment 1: 1Q2019 Chicago Avenue Ditch Water Analytical Results
Attachment 2: Laboratory Data Package

1Q2019 Chicago Avenue Ditch Water Analytical Results



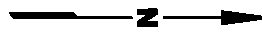
C:\Projects\025164\150110\Phase 8\SWMP\F01-1\SurfaceWaterFlowSamplingLocations.mxd 4/15/2019

Legend

- ⊗ Annual Stormwater/Surface Water Sample Location
- ⊗ Semiannual Stormwater/Surface Water Sampling Location
- Open Surface Water Waterway
- Open Stormwater Waterway
- Piped Surface Water Waterway
- Piped Stormwater Waterway
- Boeing Property
- City Limits
- Wetland Areas

Notes

1. Stormwater/surface water sampling locations are designated by SW. Pore water sampling locations are designated by PW.
2. The locations of surface water features are approximate.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



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.

Boeing Auburn
Remedial Investigation
Auburn, Washington

**Stormwater/Surface Water Flow
and Sampling Locations**

Figure
1-1



Table 1-1
1Q2019 Chicago Avenue Ditch Analytical Results
Boeing Auburn Facility
Auburn, Washington

Sample Location	Laboratory SDG	Sample Date	Sample Type	Select VOCs by SW-846 8260C (µg/L)					
				1,1-Dichloroethene	cis-1,2-Dichloroethene	Tetrachloroethene	trans-1,2-Dichloroethene	Trichloroethene	Vinyl Chloride
SW-CD4	19C0085	3/5/2019	N	0.200 U	0.727	0.200 U	0.200 U	0.596	0.178
SW-CD4	19C0085	3/5/2019	FD	0.200 U	0.720	0.200 U	0.200 U	0.576	0.177

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.

Abbreviations/Acronyms:

FD = field duplicate

µg/L = micrograms per liter

N = primary sample

SDG = sample delivery group

VOC = volatile organic compound

Laboratory Data Package



21 March 2019

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

RE: Boeing Auburn 4Q 2018 Regional GWM

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

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

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

<u>Associated Work Order(s)</u>	<u>Associated SDG ID(s)</u>
19C0085	N/A

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

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

Analytical Resources, Inc.

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





19C0085

Chain-of-Custody Record

Seattle/Edmonds (425) 778-0907 Spokane (509) 327-9737 Date 3/5/2019
 Tacoma (253) 926-2493 Portland (503) 542-1080 Page i of i
 Turnaround Time: Standard
 Accelerated _____

Project Name Boeing Auburn Project No. 25764.170.101
 Project Location/Event Auburn, WA / IQ SW sampling
 Sampler's Name KAM / HER
 Project Contact J. Wynkoop (LAI) Carl Bacha (Boeing)
 Send Results To D. Jorgensen, C. Bach, (and others see Lims list)

*Boeing 6 VOLs 82600C SIM
MS/MSD*

Testing Parameters

Special Handling Requirements:

Shipment Method:

Stored on ice: Yes / No

Observations/Comments

Sample I.D.	Date	Time	Matrix	No. of Containers
<u>Trip Blank - 20190305</u>	<u>---</u>	<u>---</u>	<u>Aq</u>	<u>2</u>
<u>SW - CD4 - 20190305</u>	<u>3/5/19</u>	<u>846</u>	<u>Aq</u>	<u>9</u>
<u>SW - 900 - 20190305</u>	<u>3/5/19</u>	<u>848</u>	<u>Aq</u>	<u>3</u>

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

Other _____

Relinquished by:
 Signature *Kelsey Mach*
 Printed Name Kelsey Mach
 Company Landau Associates
 Date 3/5/2019 Time 914

Received by:
 Signature *Sachin*
 Printed Name Sachin
 Company SRI
 Date 03/05/19 Time 1624

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

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



The Boeing Company
PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Auburn 4Q 2018 Regional GWM
Project Number: Boeing Auburn Dec 2018 Sampling Event
Project Manager: Jennifer Parsons

Reported:
21-Mar-2019 08:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TripBlank-20190305	19C0085-01	Water	05-Mar-2019 08:46	05-Mar-2019 16:24
SW-CD4-20190305	19C0085-02	Water	05-Mar-2019 08:46	05-Mar-2019 16:24
SW-900-20190305	19C0085-03	Water	05-Mar-2019 08:48	05-Mar-2019 16:24



The Boeing Company
PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Auburn 4Q 2018 Regional GWM
Project Number: Boeing Auburn Dec 2018 Sampling Event
Project Manager: Jennifer Parsons

Reported:
21-Mar-2019 08:20

Work Order Case Narrative

Revised Report March 21, 2019

This report was revised to correct sample identification of sample 19C0085-02.

Volatiles - EPA Method 8260C-SIM (Selected Ion Monitoring)

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits except cis-1,2-Dichloroethene which was out of control high and is flagged within the QC section of this report.



WORK ORDER

19C0085

Client: The Boeing Company

Project Manager: Kelly Bottem

Project: Boeing Auburn 4Q 2018 Regional GWM

Project Number: Boeing Auburn Dec 2018 Sampling Event

Report To:

The Boeing Company
Jennifer Parsons
PO Box 3703 MS 2R-96
Seattle, WA 98124
Phone: -
Fax: -

Invoice To:

The Boeing Company
Jennifer Parsons
PO Box 3703 MS 2R-96
Seattle, WA 98124
Phone :-
Fax: -

Date Due: 20-Mar-2019 18:00 (10 day TAT)

Received By: Jacob Walter

Date Received: 05-Mar-2019 16:24

Logged In By: Jacob Walter

Date Logged In: 06-Mar-2019 17:06

Samples Received at 4.6°C	
Intact, properly signed and dated custody seals attached to outside of cooler(s).....Yes	Custody papers included with the cooler..... Yes
Custody papers properly filled out (in, signed, analyses requested, etc).....Yes	Was a temperature blank included in the cooler..... No
Was sufficient ice used (if appropriate).....Yes	All bottles sealed in individual plastic bags..... No
All bottles arrived in good condition (unbroken).....Yes	All bottle labels complete and legible..... Yes
Number of containers listed on COC match number received.....Yes	Bottle labels and tags agree with COC..... Yes
Correct bottles used for the requested analyses.....Yes	All VOC vials free of air bubbles..... Yes
Analyses/bottles require preservation (attach preservation sheet excluding VOC).No	Sufficient amount of sample sent in each bottle..... Yes
Sample split at ARI.....No	

Analysis	Due	TAT	Expires	Comments
19C0085-01 TripBlank-20190305 [Water] Sampled 05-Mar-2019 08:46 (GMT-08:00) Pacific Time (US & Canada)				
<i>A = VOA Vial, Clear, 40 mL, HCL B = VOA Vial, Clear, 40 mL, HCL</i>				
8260C-SIM VOC	20-Mar-2019 15:00	10	19-Mar-2019 08:46	Custom RLs
19C0085-02 SW-CO4-20190305 [Water] Sampled 05-Mar-2019 08:46 (GMT-08:00) Pacific Time (US & Canada) MS/MSD				
<i>A = VOA Vial, Clear, 40 mL, HCL B = VOA Vial, Clear, 40 mL, HCL C = VOA Vial, Clear, 40 mL, HCL D = VOA Vial, Clear, 40 mL, HCL</i>				
<i>E = VOA Vial, Clear, 40 mL, HCL F = VOA Vial, Clear, 40 mL, HCL G = VOA Vial, Clear, 40 mL, HCL H = VOA Vial, Clear, 40 mL, HCL</i>				
<i>I = VOA Vial, Clear, 40 mL, HCL</i>				
8260C-SIM VOC	20-Mar-2019 15:00	10	19-Mar-2019 08:46	Custom RLs
19C0085-03 SW-900-20190305 [Water] Sampled 05-Mar-2019 08:48 (GMT-08:00) Pacific Time (US & Canada)				
<i>A = VOA Vial, Clear, 40 mL, HCL B = VOA Vial, Clear, 40 mL, HCL C = VOA Vial, Clear, 40 mL, HCL</i>				
8260C-SIM VOC	20-Mar-2019 15:00	10	19-Mar-2019 08:48	Custom RLs

Reviewed By _____

Date _____



Landon Taccogna

Cooler Receipt Form

ARI Client: *Boeing Auburn*

Project Name: *Auburn 102 SW Sampling*

COC No(s): _____ (NA)

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

Assigned ARI Job No: *19C0085*

Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
Time *1704* *4.6°C*

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: *2005206*

Cooler Accepted by: *JSL* Date: *03/05/19* Time: *1624*

Complete custody forms and attach all shipping documents

Log-In Phase:

- Was a temperature blank included in the cooler? YES NO
- What kind of packing material was used? ... *Bubble Wrap, Wet Ice, Gel Packs, Baggies, Foam Block* Paper Other: _____
- Was sufficient ice used (if appropriate)? NA YES NO
- Were all bottles sealed in individual plastic bags? YES NO
- Did all bottles arrive in good condition (unbroken)? YES NO
- Were all bottle labels complete and legible? YES NO
- Did the number of containers listed on COC match with the number of containers received? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were all bottles used correct for the requested analyses? YES NO
- Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO
- Were all VOC vials free of air bubbles? NA YES NO
- Was sufficient amount of sample sent in each bottle? YES NO
- Date VOC Trip Blank was made at ARI... NA *02/22/19*
- Was Sample Split by ARI: *NA* YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: *JSL* Date: *03/06/19* Time: *1706* Labels checked by: *JSL*

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

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

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



The Boeing Company
PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Auburn 4Q 2018 Regional GWM
Project Number: Boeing Auburn Dec 2018 Sampling Event
Project Manager: Jennifer Parsons

Reported:
21-Mar-2019 08:20

TripBlank-20190305
19C0085-01 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM

Sampled: 03/05/2019 08:46

Instrument: NT16 Analyst: PB

Analyzed: 03/12/2019 13:30

Sample Preparation:

Preparation Method: EPA 5030 (Purge and Trap)

Extract ID: 19C0085-01 B

Preparation Batch: BHC0319

Sample Size: 10 mL

Prepared: 12-Mar-2019

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.200	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.200	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.200	ND	ug/L	U
Trichloroethene	79-01-6	1	0.200	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.200	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.1	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			75-125 %	99.7	%	



The Boeing Company
PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Auburn 4Q 2018 Regional GWM
Project Number: Boeing Auburn Dec 2018 Sampling Event
Project Manager: Jennifer Parsons

Reported:
21-Mar-2019 08:20

SW-CD4-20190305
19C0085-02 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM

Sampled: 03/05/2019 08:46

Instrument: NT16 Analyst: PB

Analyzed: 03/12/2019 17:52

Sample Preparation:

Preparation Method: EPA 5030 (Purge and Trap)

Extract ID: 19C0085-02 E

Preparation Batch: BHC0319

Sample Size: 10 mL

Prepared: 12-Mar-2019

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.178	ug/L	
1,1-Dichloroethene	75-35-4	1	0.200	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.200	0.727	ug/L	
trans-1,2-Dichloroethene	156-60-5	1	0.200	ND	ug/L	U
Trichloroethene	79-01-6	1	0.200	0.596	ug/L	
Tetrachloroethene	127-18-4	1	0.200	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.9	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			75-125 %	98.1	%	



The Boeing Company
PO Box 3703 MS 2R-96
Seattle WA, 98124

Project: Boeing Auburn 4Q 2018 Regional GWM
Project Number: Boeing Auburn Dec 2018 Sampling Event
Project Manager: Jennifer Parsons

Reported:
21-Mar-2019 08:20

SW-900-20190305
19C0085-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260C-SIM

Sampled: 03/05/2019 08:48

Instrument: NT16 Analyst: PB

Analyzed: 03/12/2019 18:12

Sample Preparation:

Preparation Method: EPA 5030 (Purge and Trap)

Extract ID: 19C0085-03 C

Preparation Batch: BHC0319

Sample Size: 10 mL

Prepared: 12-Mar-2019

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.177	ug/L	
1,1-Dichloroethene	75-35-4	1	0.200	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.200	0.720	ug/L	
trans-1,2-Dichloroethene	156-60-5	1	0.200	ND	ug/L	U
Trichloroethene	79-01-6	1	0.200	0.576	ug/L	
Tetrachloroethene	127-18-4	1	0.200	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	104	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	96.7	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			75-125 %	99.8	%	



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Project: Boeing Auburn 4Q 2018 Regional GWM
Project Number: Boeing Auburn Dec 2018 Sampling Event
Project Manager: Jennifer Parsons

Reported:
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Volatile Organic Compounds - SIM - Quality Control

Batch BHC0319 - EPA 5030 (Purge and Trap)

Instrument: NT16 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BHC0319-BLK1)										
				Prepared: 12-Mar-2019 Analyzed: 12-Mar-2019 11:28						
Vinyl chloride	ND	0.0200	ug/L							U
1,1-Dichloroethene	ND	0.200	ug/L							U
cis-1,2-Dichloroethene	ND	0.200	ug/L							U
trans-1,2-Dichloroethene	ND	0.200	ug/L							U
Trichloroethene	ND	0.200	ug/L							U
Tetrachloroethene	ND	0.200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5220		ug/L	5000	104		80-129			
Surrogate: Toluene-d8	4780		ug/L	5000	95.7		80-120			
Surrogate: 4-Bromofluorobenzene	4990		ug/L	5000	99.8		75-125			
LCS (BHC0319-BS1)										
				Prepared: 12-Mar-2019 Analyzed: 12-Mar-2019 10:48						
Vinyl chloride	2.06	0.0200	ug/L	2.00		103	76-120			
1,1-Dichloroethene	2.29	0.200	ug/L	2.00		115	80-120			
cis-1,2-Dichloroethene	2.36	0.200	ug/L	2.00		118	80-120			
trans-1,2-Dichloroethene	2.39	0.200	ug/L	2.00		120	80-120			
Trichloroethene	2.07	0.200	ug/L	2.00		103	80-120			
Tetrachloroethene	2.14	0.200	ug/L	2.00		107	80-122			
Surrogate: 1,2-Dichloroethane-d4	4910		ug/L	5000	98.1		80-129			
Surrogate: Toluene-d8	4830		ug/L	5000	96.6		80-120			
Surrogate: 4-Bromofluorobenzene	5070		ug/L	5000	101		75-125			
LCS Dup (BHC0319-BSD1)										
				Prepared: 12-Mar-2019 Analyzed: 12-Mar-2019 11:08						
Vinyl chloride	1.99	0.0200	ug/L	2.00		99.7	76-120	3.04	30	
1,1-Dichloroethene	2.24	0.200	ug/L	2.00		112	80-120	2.33	30	
cis-1,2-Dichloroethene	2.36	0.200	ug/L	2.00		118	80-120	0.19	30	
trans-1,2-Dichloroethene	2.36	0.200	ug/L	2.00		118	80-120	1.22	30	
Trichloroethene	1.95	0.200	ug/L	2.00		97.7	80-120	5.70	30	
Tetrachloroethene	2.04	0.200	ug/L	2.00		102	80-122	4.79	30	
Surrogate: 1,2-Dichloroethane-d4	5180		ug/L	5000	104		80-129			
Surrogate: Toluene-d8	4870		ug/L	5000	97.4		80-120			
Surrogate: 4-Bromofluorobenzene	5180		ug/L	5000	104		75-125			
Matrix Spike (BHC0319-MS2)										
		Source: 19C0085-02		Prepared: 12-Mar-2019 Analyzed: 12-Mar-2019 20:33						
Vinyl chloride	2.15	0.0200	ug/L	2.00	0.178	98.6	76-120			



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Batch BHC0319 - EPA 5030 (Purge and Trap)

Instrument: NT16 Analyst: PB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BHC0319-MS2)		Source: 19C0085-02		Prepared: 12-Mar-2019		Analyzed: 12-Mar-2019 20:33				
1,1-Dichloroethene	2.24	0.200	ug/L	2.00	ND	112	80-120			
cis-1,2-Dichloroethene	3.15	0.200	ug/L	2.00	0.727	121	80-120			*
trans-1,2-Dichloroethene	2.43	0.200	ug/L	2.00	ND	118	80-120			
Trichloroethene	2.48	0.200	ug/L	2.00	0.596	94.1	80-120			
Tetrachloroethene	1.97	0.200	ug/L	2.00	ND	98.2	80-122			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5190		ug/L	5000	5130	104	80-129			
<i>Surrogate: Toluene-d8</i>	4900		ug/L	5000	4840	98.0	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	5110		ug/L	5000	4900	102	75-125			

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

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BHC0319-MSD2)		Source: 19C0085-02		Prepared: 12-Mar-2019		Analyzed: 12-Mar-2019 20:53				
Vinyl chloride	2.10	0.0200	ug/L	2.00	0.178	96.0	76-120	2.43	30	
1,1-Dichloroethene	2.17	0.200	ug/L	2.00	ND	108	80-120	2.99	30	
cis-1,2-Dichloroethene	3.02	0.200	ug/L	2.00	0.727	115	80-120	4.36	30	
trans-1,2-Dichloroethene	2.33	0.200	ug/L	2.00	ND	113	80-120	4.06	30	
Trichloroethene	2.45	0.200	ug/L	2.00	0.596	92.8	80-120	1.06	30	
Tetrachloroethene	1.96	0.200	ug/L	2.00	ND	97.7	80-122	0.57	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5130		ug/L	5000	5130	103	80-129			
<i>Surrogate: Toluene-d8</i>	4890		ug/L	5000	4840	97.7	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	5130		ug/L	5000	4900	103	75-125			

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



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Certified Analyses included in this Report

Analyte	Certifications
EPA 8260C-SIM in Water	
Acrylonitrile	NELAP,CALAP,WADOE
Vinyl chloride	NELAP,CALAP,WADOE
1,1-Dichloroethene	NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	NELAP,CALAP,WADOE
Trichloroethene	NELAP,CALAP,WADOE
Tetrachloroethene	NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	NELAP,CALAP,WADOE
1,2-Dichloroethane	NELAP,CALAP,WADOE
Benzene	NELAP,CALAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
CALAP	California Department of Public Health CAELAP	2748	06/30/2019
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-011	05/12/2019
WADOE	WA Dept of Ecology	C558	06/30/2019
WA-DW	Ecology - Drinking Water	C558	06/30/2019



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Notes and Definitions

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