April 15, 2024

Transmitted via email to: jusc461@ECY.WA.GOV

Washington State Department of Ecology
Northwest Regional Office
15700 Dayton Avenue N
PO Box 330316
Shoreline, WA 98133-9716

Attn: Ms. Julia Schwarz

Re: First Quarter 2024 Progress Report
North Boeing Field/Georgetown Steam Plant (NBF/GTSP) Site
Agreed Order No. DE 5685
Landau Project No. 0025082.924.123

Dear Ms. Schwarz:

As required by Section VII of the First Amendment to the above-referenced Agreed Order (Order), Landau Associates, Inc. (Landau) is providing this progress report to the Washington State Department of Ecology (Ecology) on behalf of The Boeing Company (Boeing) and the City of Seattle (City). This report covers the first quarter (January, February, and March) of 2024 and includes the information required by the Order, and information required by Ecology's November 9, 2016 letter re: Change in Progress Report Schedule and Content (Ecology 2016).

Meetings and Correspondence with Ecology

Significant meetings and correspondence with Ecology during First Quarter 2024 are summarized below:

Meeting/ Correspondence Date	Topic
January 4, 2024	Ecology emailed Boeing, the City, and King County International Airport (KCIA) providing additional details regarding the scope of the per-and polyfluoroalkyl substances (PFAS) investigation requested in Ecology's September 15, 2022 letter. Ecology indicated in the email that the Former Fire Training Center must be included as part of the subsurface investigation for PFAS.
January 12, 2024	The potentially liable parties (PLPs) submitted a schedule to Ecology regarding document review and preparation of a Historical Summary Technical Memorandum and a PFAS Investigation Work Plan.
January 18, 2024	The PLPs responded to Ecology's January 4, 2024 email, indicating that Boeing, the City, and KCIA disagreed with Ecology's direction to conduct a PFAS investigation at the Fire Training Center under the NBF/GTSP Agreed Order and requested a meeting with Ecology to discuss this dispute.

Meeting/ Correspondence Date	Topic
January 24, 2024	The project coordinators from Boeing, the City, and Ecology met to discuss the dispute.
February 22, 2024	The project coordinators from Boeing, the City, KCIA, and Ecology met to further discuss the dispute.
March 8, 2024	Ecology issued a letter to the PLPs via email indicating that resolution to the dispute has been achieved. The resolution includes KCIA's agreement to investigate the presence or absence of PFAS at the Former Fire Training Center as an independent investigation conducted by KCIA, not under the Agreed Order. KCIA agreed to share the work plan and investigation results with Ecology, Boeing, and the City. Per the resolution, Ecology, Boeing, the City, and KCIA will meet to discuss the results of KCIA's sampling at the Former Fire Training Center following completion of the KCIA investigation.
March 14, 2024	Ecology issued a revised resolution letter clarifying a sentence about the PFAS investigation work plans at the request of the PLPs.

RI Activities and Data Collected During First Quarter 2024

- Semiannual groundwater monitoring was completed at NBF in February 2024. Semiannual groundwater monitoring consists of collection of groundwater samples for laboratory analysis at selected wells in the 3-360 and 3-800 Areas; groundwater elevations are also measured in the 3-360 Area for preparation of elevation contours. Groundwater monitoring locations in the 3-360 and 3-800 Areas are shown on Figure 1. Depth to water measurements and calculated elevations are presented in Table 1. Groundwater data plots for select NBF wells are provided in Attachment 1. Groundwater contours for depth to water measured in in February are shown on Figure 2.
- In addition to the semiannual monitoring, groundwater elevations levels were measured at five wells in the 3-360 area to evaluate seasonal changes from wet to dry season. The water level changes from August 2023 to February 2024 are included on Table 2; observed changes are consistent with a transition from dry season to wet season water level elevations.
- The PLPs submitted a schedule to Ecology regarding document review and preparation of a Historical Summary Technical Memorandum and a PFAS Investigation Work Plan on January 12, 2024, and continued progress on the PFAS document review.

Offsite Investigation Activities Performed During First Quarter 2024

- None this period.

Data Packages for Which Data Validation Was Completed During First Quarter 2024

Data validation was completed on groundwater monitoring data for the package listed below:

- 24B0347.

Validated semiannual groundwater data is provided in Table 3. Electronic copies of the complete data packages are provided in Attachment 2.

Other Non-RI Work Performed During First Quarter 2024

- Seattle City Light (SCL), Seattle Parks and Recreation (SPR), and Seattle Department of Transportation (SDOT; collectively "the City") are teaming to develop an off-leash pet area and bicycle/pedestrian trail in the Georgetown and South Park communities (Proposed Park Site). The final Interim Action Work Plan (Integral 2024) was submitted to Ecology on January 25, 2024. Project permitting and bid preparation are underway. The project is expected to be released for bid in 2024. Construction is anticipated in 2024 and will likely last 4 to 6 months.

Deviations from Approved Work Plan

- None this period.

Proposed Schedule Revisions and Issues That Have Potential to Impact the Project Schedule or Objectives

- None this period.

Anticipated Second Quarter 2024 Activities

- The PLPs will continue to work on preparation of the PFAS Historical Summary Technical Memorandum in the second quarter of 2024 in accordance with the schedule submitted to Ecology.
- The PLPs will begin working with Ecology to address Ecology comments on the Draft RI Report, which were received by the PLPs on April 4, 2024 at the start of the second quarter.

If you have any questions regarding this progress report or other topics, please contact Molly Taptich (206-883-7494), Allison Crowley (206-684-3167), or Colette Gaona (503-542-1083).

LANDAU ASSOCIATES, INC.

Colette M. Gaona
Project Manager

TJH/CMG/ljl
[P:\025\082\.915 RI-FS\M\PROGRESS REPORTS - QUARTERLY\2024\1Q24\BOEING_NBF-GTSP_LANDAU_1Q24_PROG RPT_FINAL.DOCX]

cc: Molly Taptich, The Boeing Company
Allison Crowley, City of Seattle
Peter Dumaliang, King County

Attachments

Figure 1. NBF/GTSP RI Groundwater Monitoring Well Locations, February 2024
Figure 2. NBF/GTSP RI 3-360 Area Groundwater Elevation Contours, February 14, 2024
Table 1. February 2024 3-360 Area Groundwater Elevations
Table 2. 3-360 Area Water Level Monitoring
Table 3. Semiannual Groundwater Monitoring Data
Attachment 1. Semiannual Groundwater Data Plots
Attachment 2. Laboratory Data Packages

References

Ecology. 2016. Letter: Change in Progress Report Schedule and Content, North Boeing Field/Georgetown Steam Plant Agreed Order No. DE 5685. From Mark Adams, Cleanup Project Manager, Toxics Cleanup Program, Washington State Department of Ecology, to Carl Bach, The Boeing Company, Allison Crowley, Seattle City Light, and Peter Dumaliang, King County International Airport. November 9.

Integral. 2024. Georgetown Flume Off-Leash Area and Trail Interim Action Work Plan. Integral Consulting Inc. January 25.

G:\Projects\025\082\922\123\F01RISemiAnnualGroundwaterSampleLocations.mxd 4/15/2022

Legend

- Groundwater Monitoring Well
- Groundwater Monitoring Well (Decommissioned)
- Site Boundary
- City of Seattle Proposed Off-Leash Pet Area and Bicycle/Pedestrian Trail
- NGW104 Semiannual Groundwater Monitoring Well
- Quarterly Groundwater Elevation Monitoring Locations

Note

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

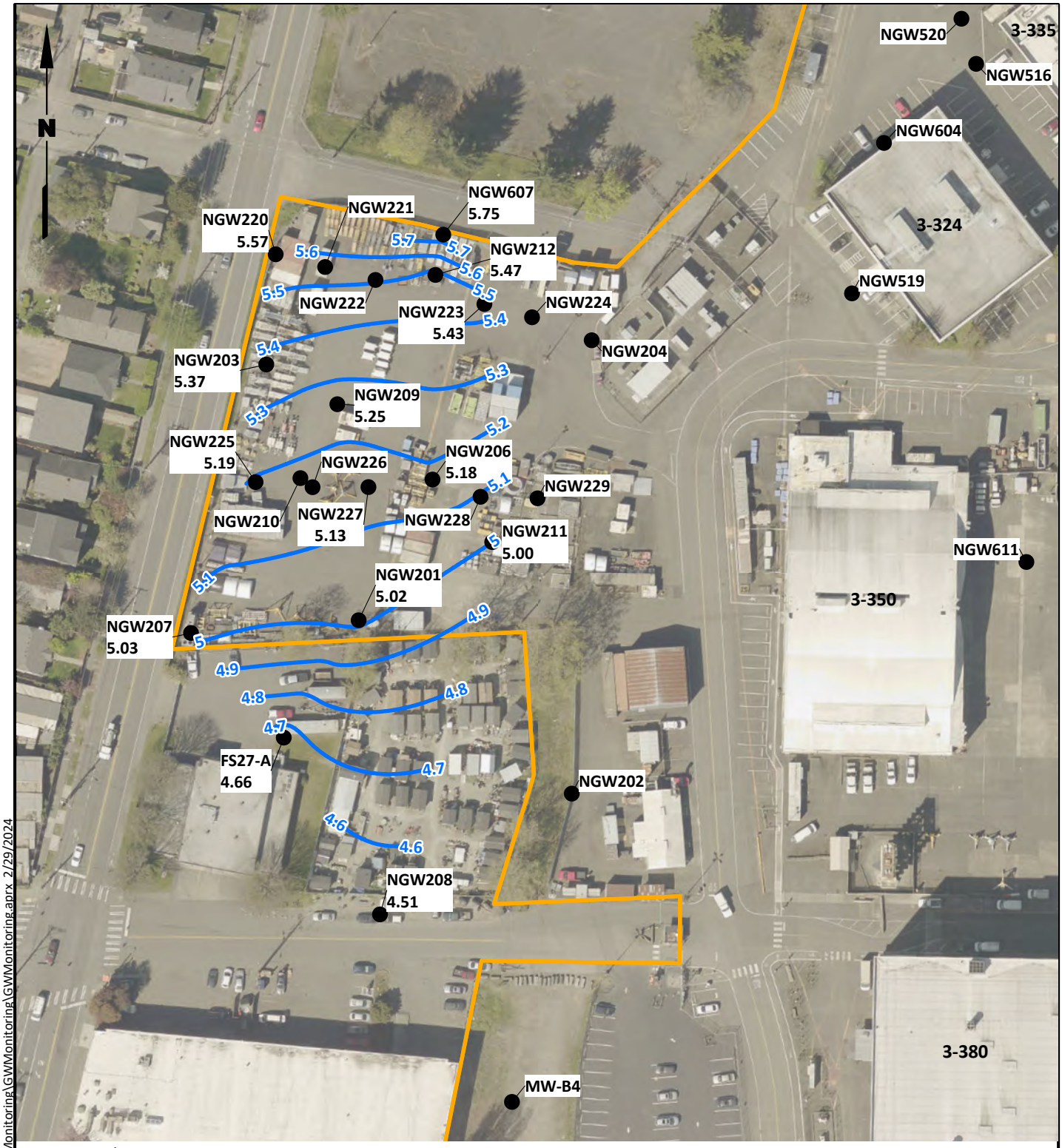
Data Source: King County GIS.

LANDAU ASSOCIATES

NBF/GTSP RI
Seattle, Washington

NBF/GTSP RI Groundwater Monitoring Well Locations, February 2024

Figure 1



Legend

- Groundwater Monitoring Well
- Groundwater Elevation Contour
- Site Boundary
- **NGW201** Well ID
- **5.02** Groundwater Elevation (ft)

0 100 200

Scale in Feet

Notes

1. Groundwater elevations in NGVD29 datum, ft, measured on February 14, 2024.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: King County GIS.

G:\Projects\025\082\923\123\GWMonitoring\GWMonitoring\GWMonitoring.aprx 2/29/2024

LANDAU ASSOCIATES

NBF/GTSP RI
Seattle, Washington

NBF/GTSP RI 3-360 Area Groundwater Elevation Contours February 14, 2024

Figure 2

Table 1
February 2024 3-360 Area Groundwater Elevations
NBF/GTSP Remedial Investigation
Seattle, Washington

	Date	2/14/2024	
Location Name	**TOC Elevation (ft) (a)**	**DTW (ft)**	**GW Elevation (ft)**
FS27-A	13.94	9.28	4.66
NGW201	12.57	7.55	5.02
NGW203	13.56	8.19	5.37
NGW206	12.28	7.10	5.18
NGW207	12.80	7.77	5.03
NGW208	10.83	6.32	4.51
NGW209	13.3	8.05	5.25
NGW211	10.84	5.84	5.00
NGW212	12.52	7.05	5.47
NGW220	13.32	7.75	5.57
NGW223	11.73	6.30	5.43
NGW225	12.26	7.07	5.19
NGW227	12.61	7.49	5.12
NGW607	12.67	6.92	5.75

Abbreviations and Acronyms:

DTW = depth to water

ft = feet

NM = not measured

TOC = top of casing

Notes:

(a) Vertical Datum: NGVD29, US feet.
To convert NGVD29 elevations to NAV88 elevations add 3.59 feet.

Table 2
3-360 Area Water Level Monitoring
NBF/GTSP Remedial Investigation
Seattle, Washington

	NGW203		NGW220		NGW223		NGW225		NGW607	
TOC Elevation (a, b)	13.56		13.32		11.73		12.26		12.67	
	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)	DTW (ft)	Elevation (ft)
3/4/2020	8.79	4.77	8.30	5.02	6.95	4.78	7.47	4.79	7.64	5.03
8/11/2020	10.00	3.56	9.53	3.79	8.06	3.67	9.55	2.71	8.80	3.87
11/9/2020	10.06	3.50	9.63	3.69	8.17	3.56	9.03	3.23	9.04	3.63
3/24/2021	8.64	4.92	8.14	5.18	6.75	4.98	7.55	4.71	7.24	5.43
6/23/2021	9.68	3.88	9.27	4.05	7.91	3.82	7.55	4.71	5.86	6.81
8/17/2021	10.01	3.55	9.53	3.79	8.06	3.67	8.83	3.43	8.92	3.75
12/6/2021	8.93	4.63	8.44	4.88	7.04	4.69	7.81	4.45	7.79	4.88
2/16/2022	8.79	4.77	8.18	5.14	6.87	4.86	7.29	4.97	7.41	5.26
6/17/2022	9.03	4.53	8.56	4.76	7.14	4.59	7.92	4.34	7.51	5.16
8/8/2022	9.62	3.94	9.14	4.18	7.70	4.03	8.60	3.66	8.53	4.14
3/8/2023	8.80	4.76	8.34	4.98	6.88	4.85	7.69	4.57	7.59	5.08
8/8/2023	9.71	3.85	9.27	4.05	7.76	3.97	8.57	3.69	8.62	4.05
2/14/2024	8.19	5.37	7.75	5.57	6.30	5.43	7.07	5.19	6.92	5.75
Delta (c)	1.52		1.52		1.46		1.50		1.70	

Abbreviations and Acronyms:

DTW = depth to water

ft = feet

TOC = top of casing

Notes:

(a) Vertical Datum: NGVD29, US feet.

(b) To convert NGVD29 elevations to NAV88 elevations add 3.59 feet.

(c) Delta is presented as the difference in feet between the two most recent water level measurements.

Table 3
Semiannual Groundwater Monitoring Data
NBF/GTSP Remedial Investigation
Seattle, Washington

Analyte	Area, Sample Location, Sample Date, Sample Type, Laboratory SDG														
	3-360 Building Area											3-800 Building Area			
	FS27-A 2/14/2024 N 24B0347	NGW201 2/14/2024 N 24B0347	NGW203 2/14/2024 N 24B0347	NGW206 2/14/2024 N 24B0347	NGW207 2/14/2024 N 24B0347	NGW208 2/14/2024 N 24B0347	NGW211 2/14/2024 N 24B0347	NGW212 2/14/2024 N 24B0347	NGW220 2/14/2024 N 24B0347	NGW607 2/14/2024 N 24B0347	NGW607 2/14/2024 FD 24B0347	NGW301 2/14/2024 N 24B0347	NGW307 [a] 2/14/2024 N 24B0347	NGW308 2/14/2024 N 24B0347	NGW309 2/14/2024 N 24B0347
VOCs (µg/L; SW-846 8260D)															
cis-1,2-Dichloroethene	**0.21**	**1.34**	**10.7**	0.20 U	**0.29**	**2.08**	**1.19**	**1.30**	**8.66**	**3.76**	**3.64**	**3.49 J**	**8.42**	**5.49**	0.20 U
Tetrachloroethene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.38 J**	**3.76**	**0.31**	0.20 U
Trichloroethene	0.20 U	0.20 U	**0.58**	0.20 U	**0.50**	**0.26**	0.20 U	**0.32**	**0.91**	**0.84**	**0.81**	0.20 UJ	1.00 U	0.20 U	0.20 U
Vinyl Chloride	0.20 U	**5.40**	**4.14**	**2.09**	0.20 U	0.20 U	**0.85**	**2.24**	**3.17**	**0.46**	**0.43**	**0.41**	1.00 U	0.20 U	0.20 U
General Chemistry (mg/L; SM 5310B)															
Total Organic Carbon	**6.98**	**113.6**	**225.1**	**39.24**	**3587**	**7.13**	**565.4**	**552.6**	**223.3**	**674.9**	**693.1**	**177.4**	**8534**	**72.79**	**30.57**

Notes:

Bold text indicates detected analyte.

a) Reporting limits for trichloroethene and vinyl chloride are elevated in sample NGW307 due to a necessary dilution to mitigate sample foaming.

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

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

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

Abbreviations and Acronyms:

µg/L = micrograms per liter

FD = field duplicate

mg/L = milligrams per liter

N = primary sample

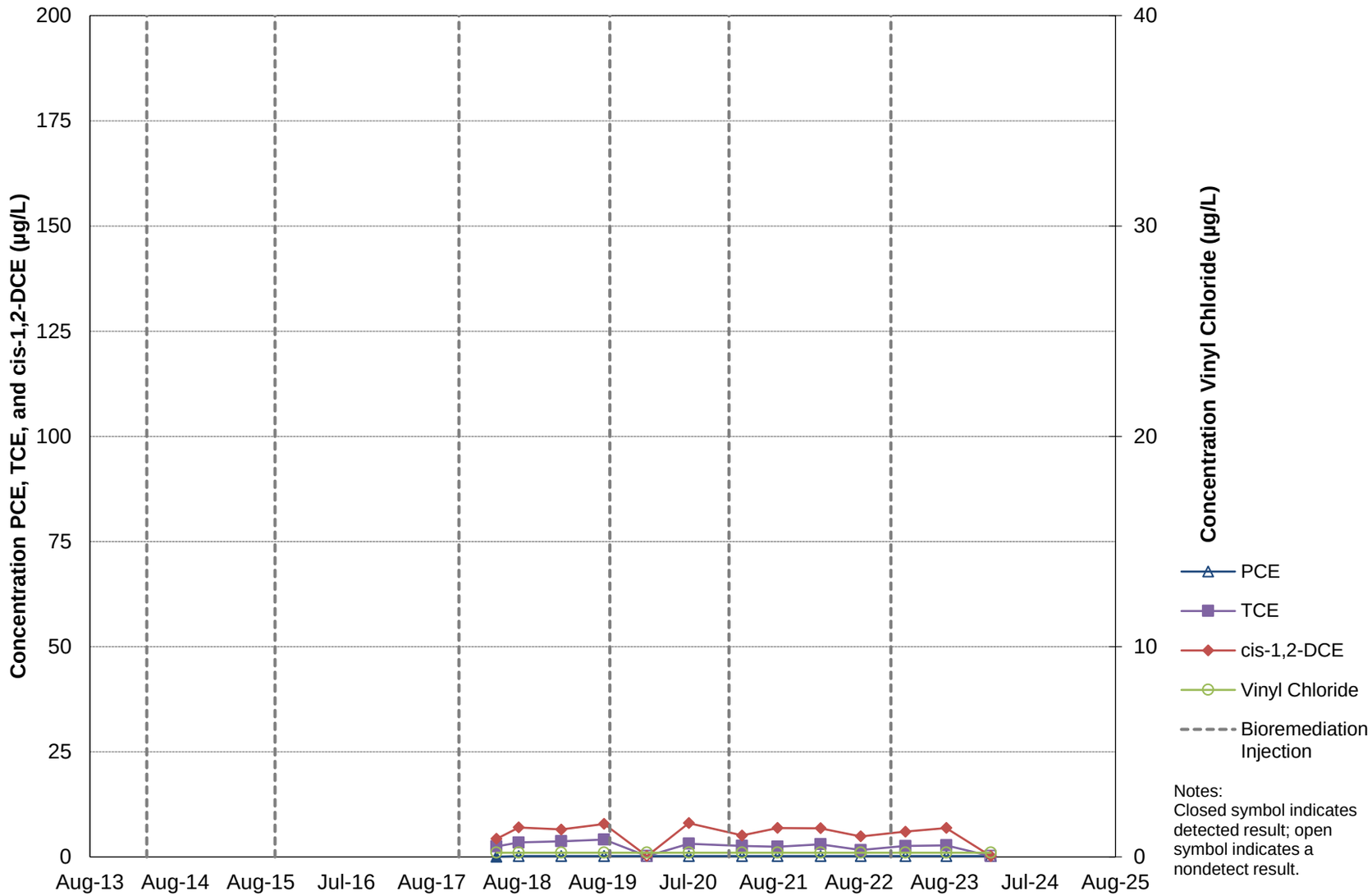
SDG = sample delivery group

VOCs = volatile organic compounds

ATTACHMENT 1

Semiannual Groundwater Data Plots

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



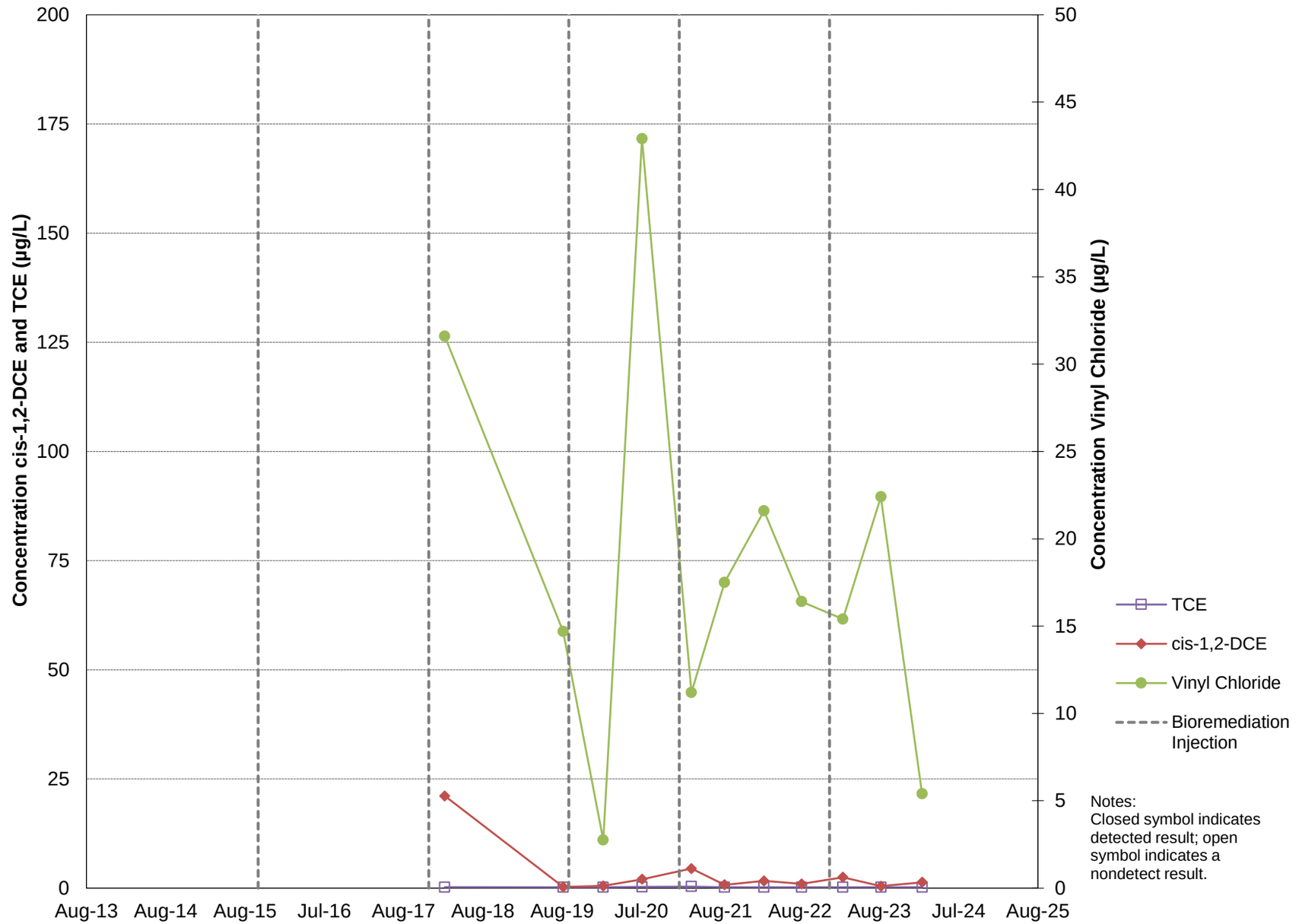
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 FS27A Time Series

Figure
1-1

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



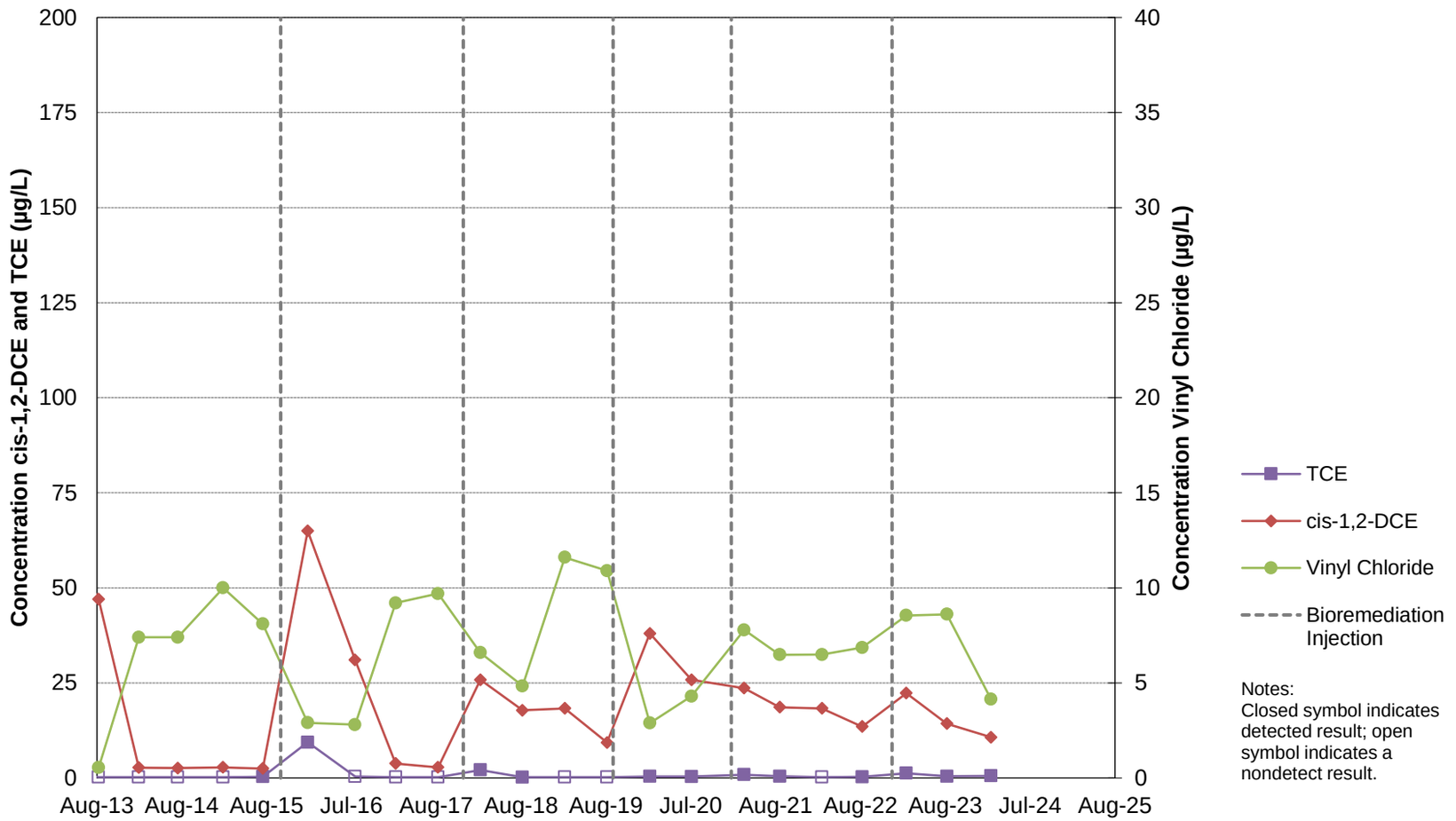
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW201 Time Series

Figure
1-2

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



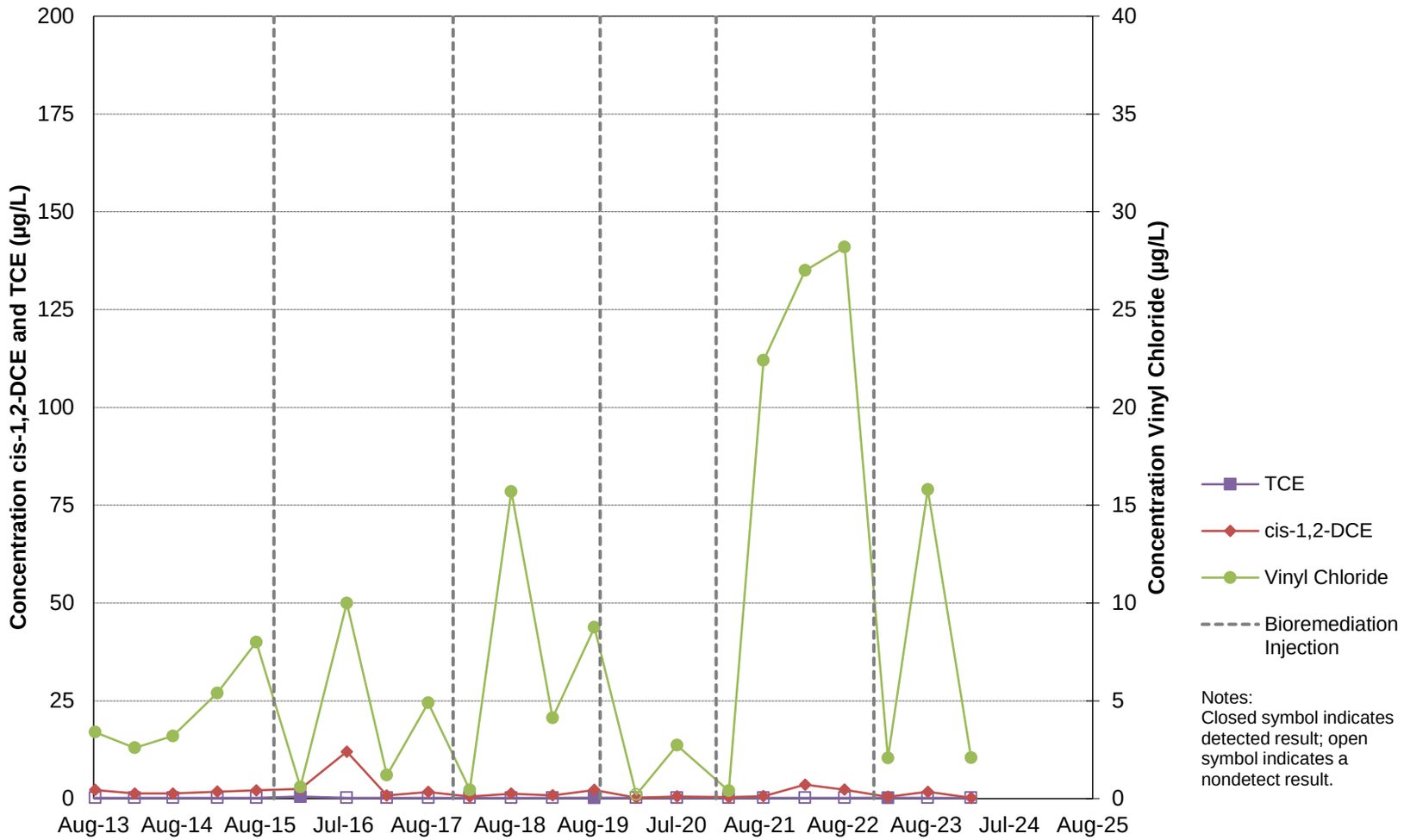
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW203 Time Series

Figure
1-3

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



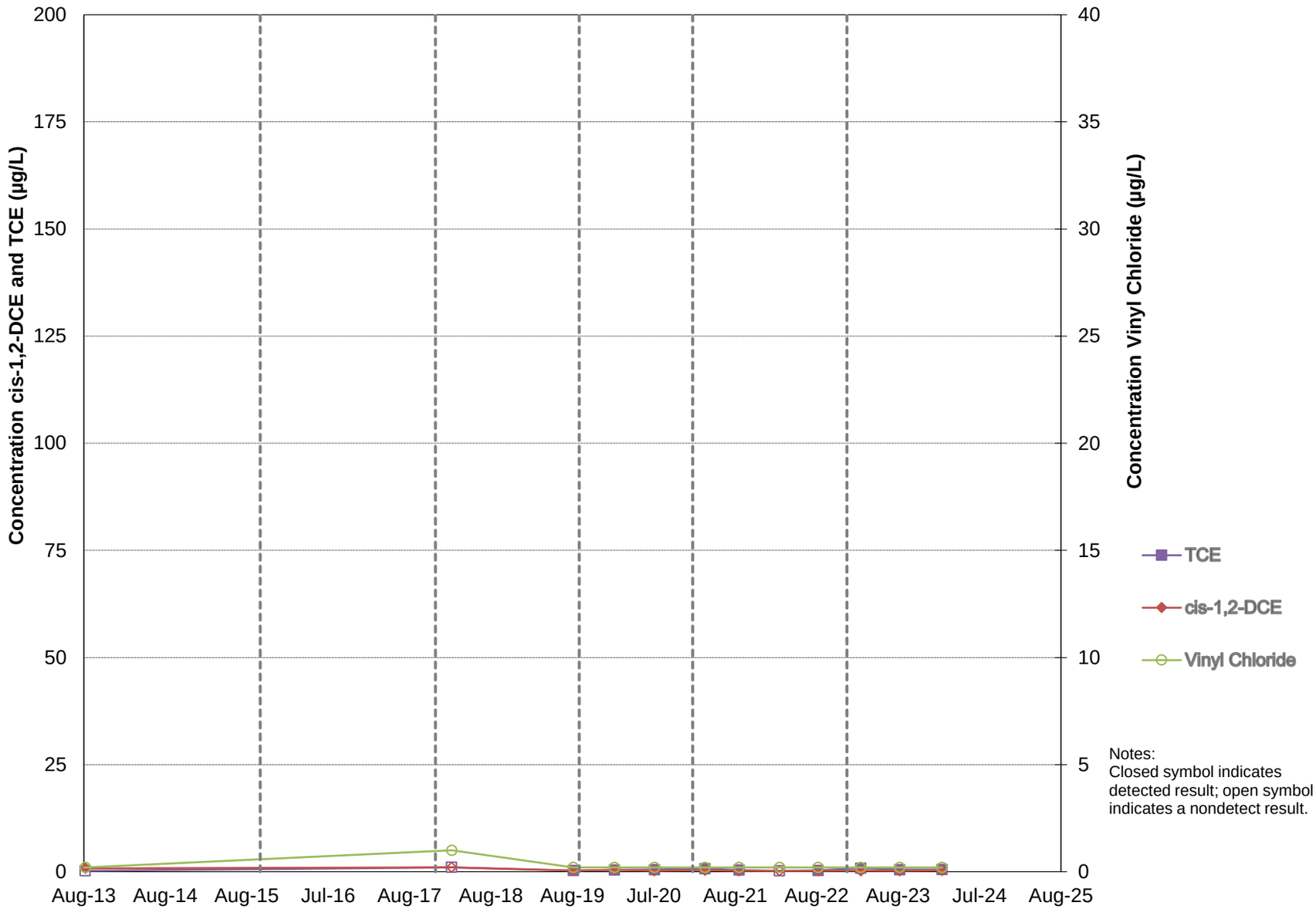
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW206 Time Series

Figure
1-4

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



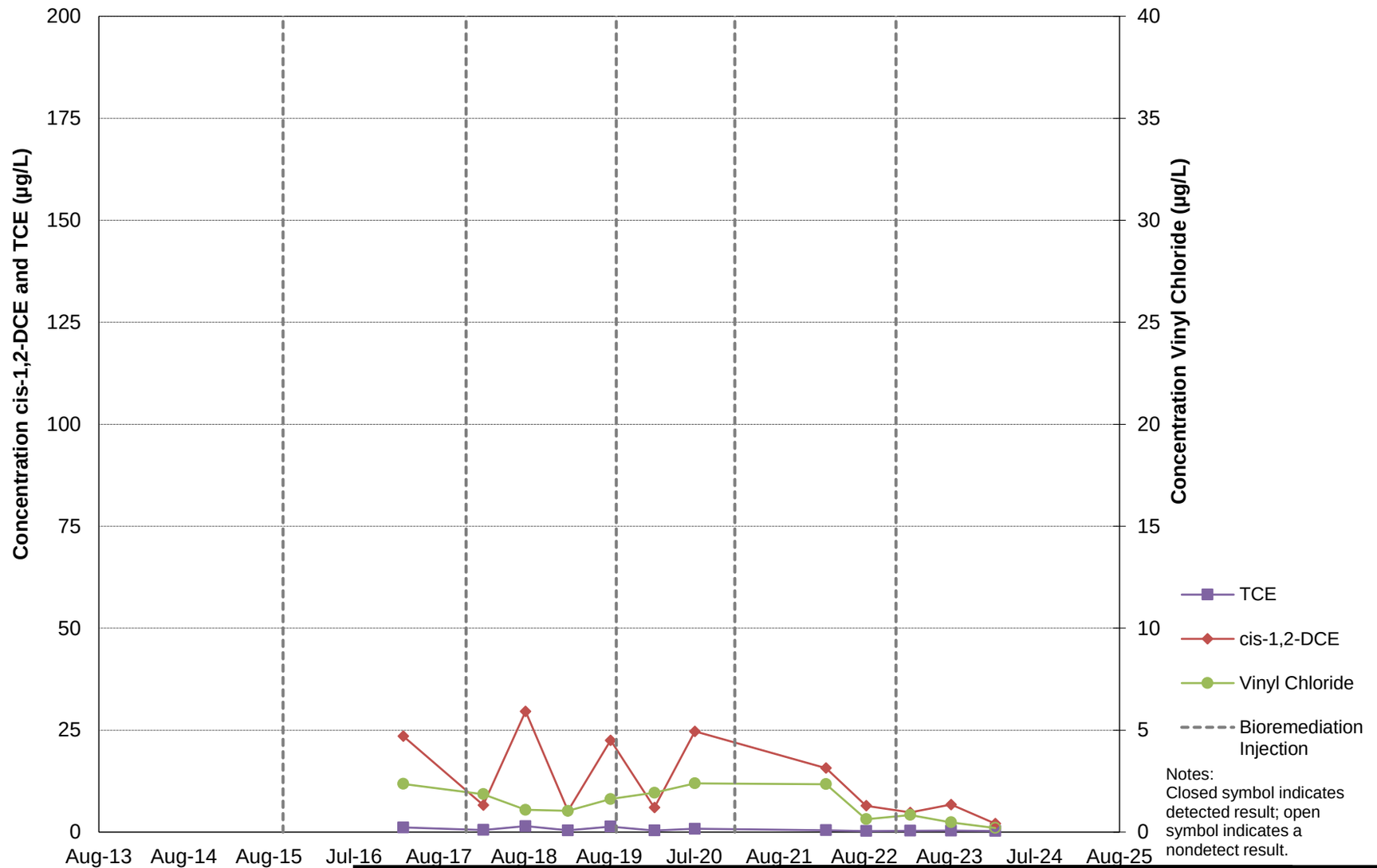
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW207 Time Series

Figure
1-5

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



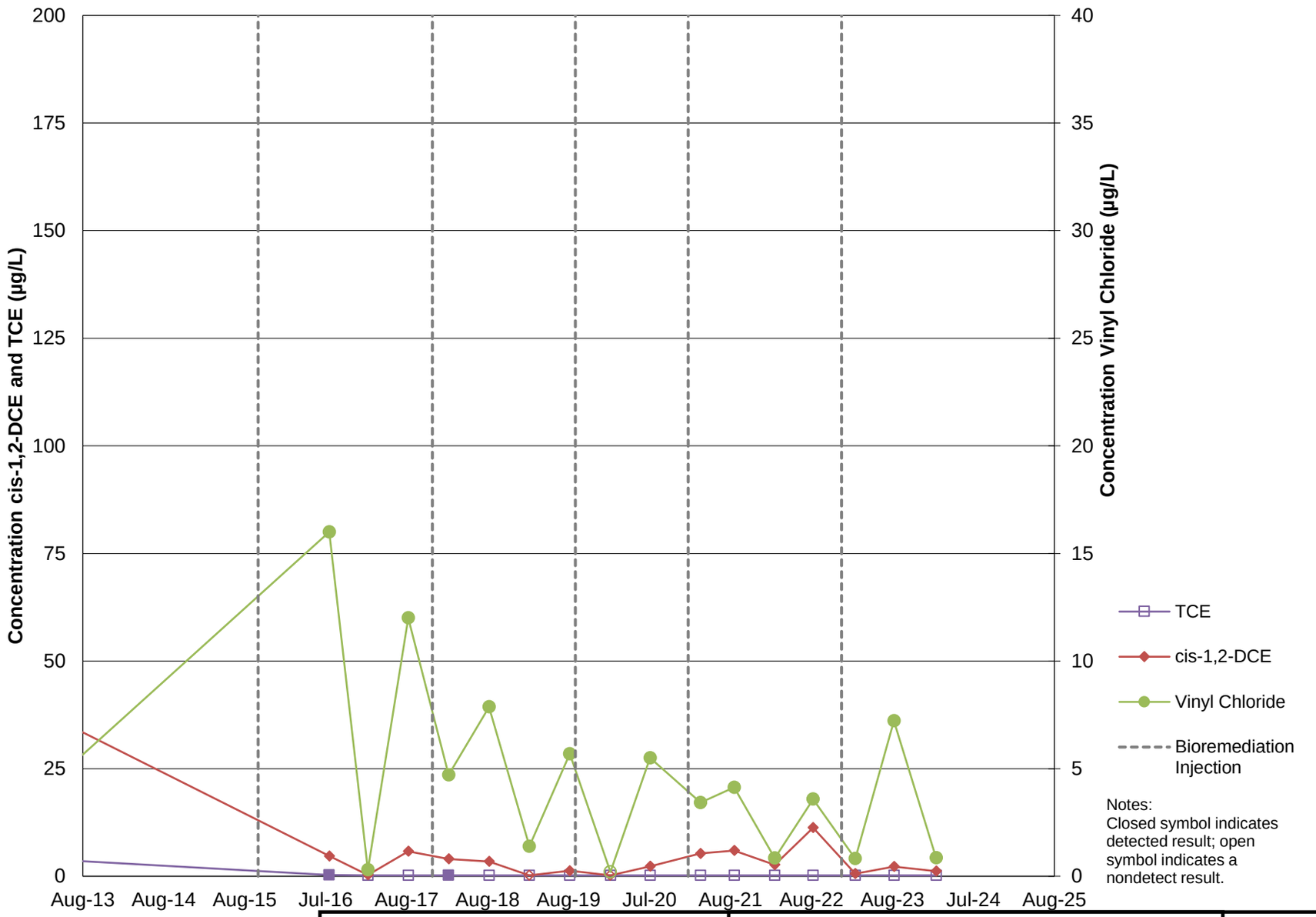
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW208 Time Series

Figure
1-6

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



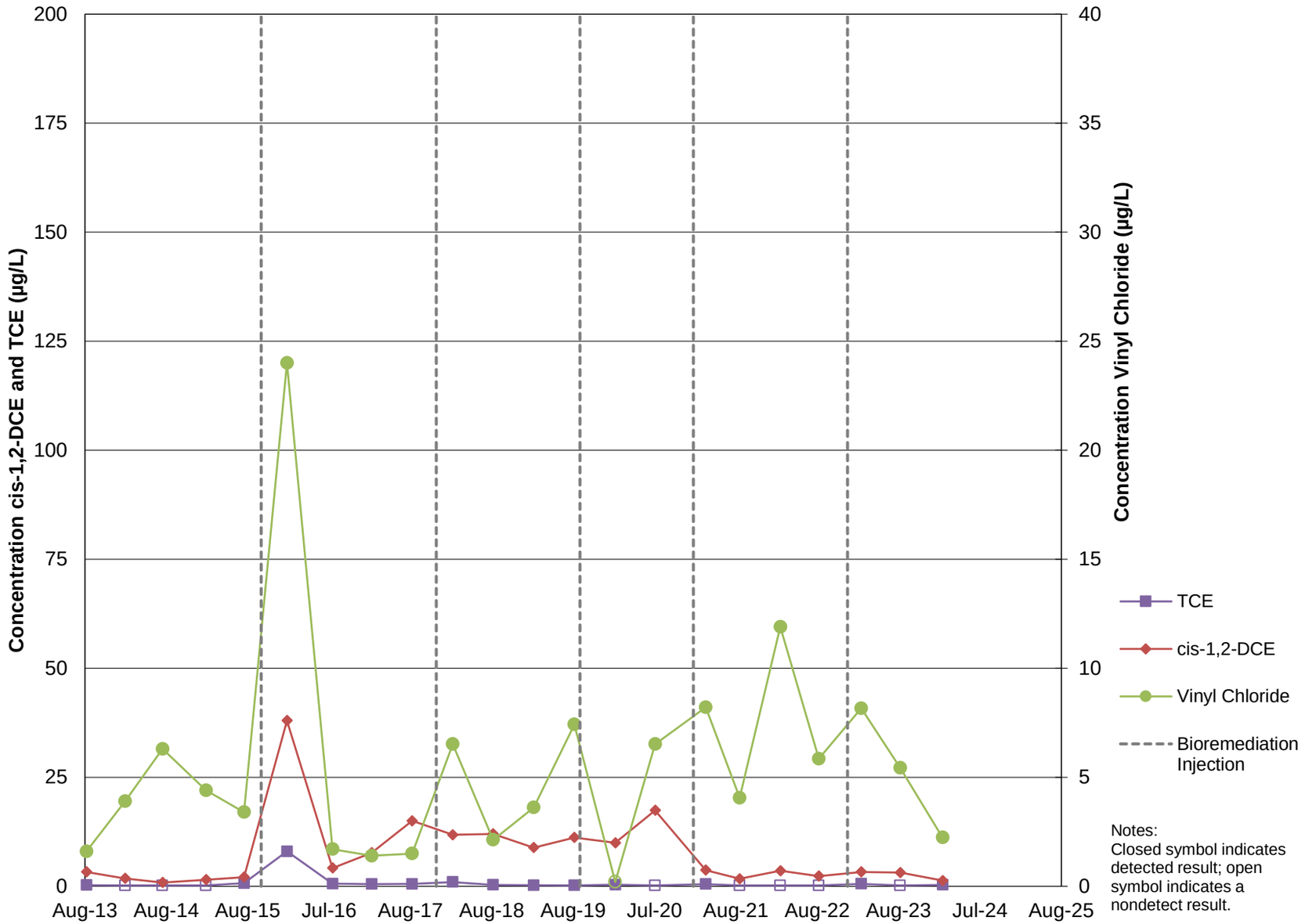
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW211 Time Series

Figure
1-7

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



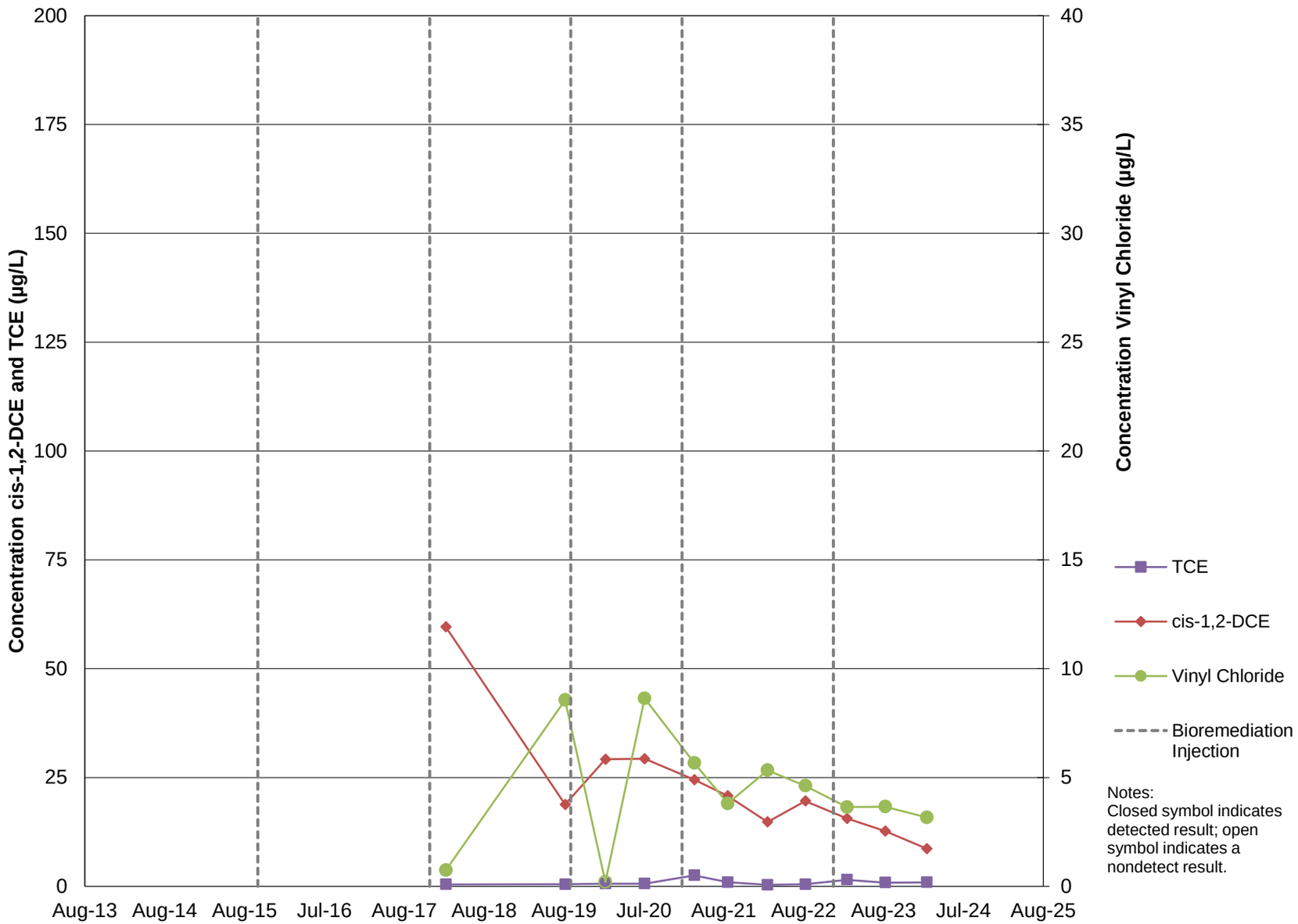
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW212 Time Series

Figure
1-8

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



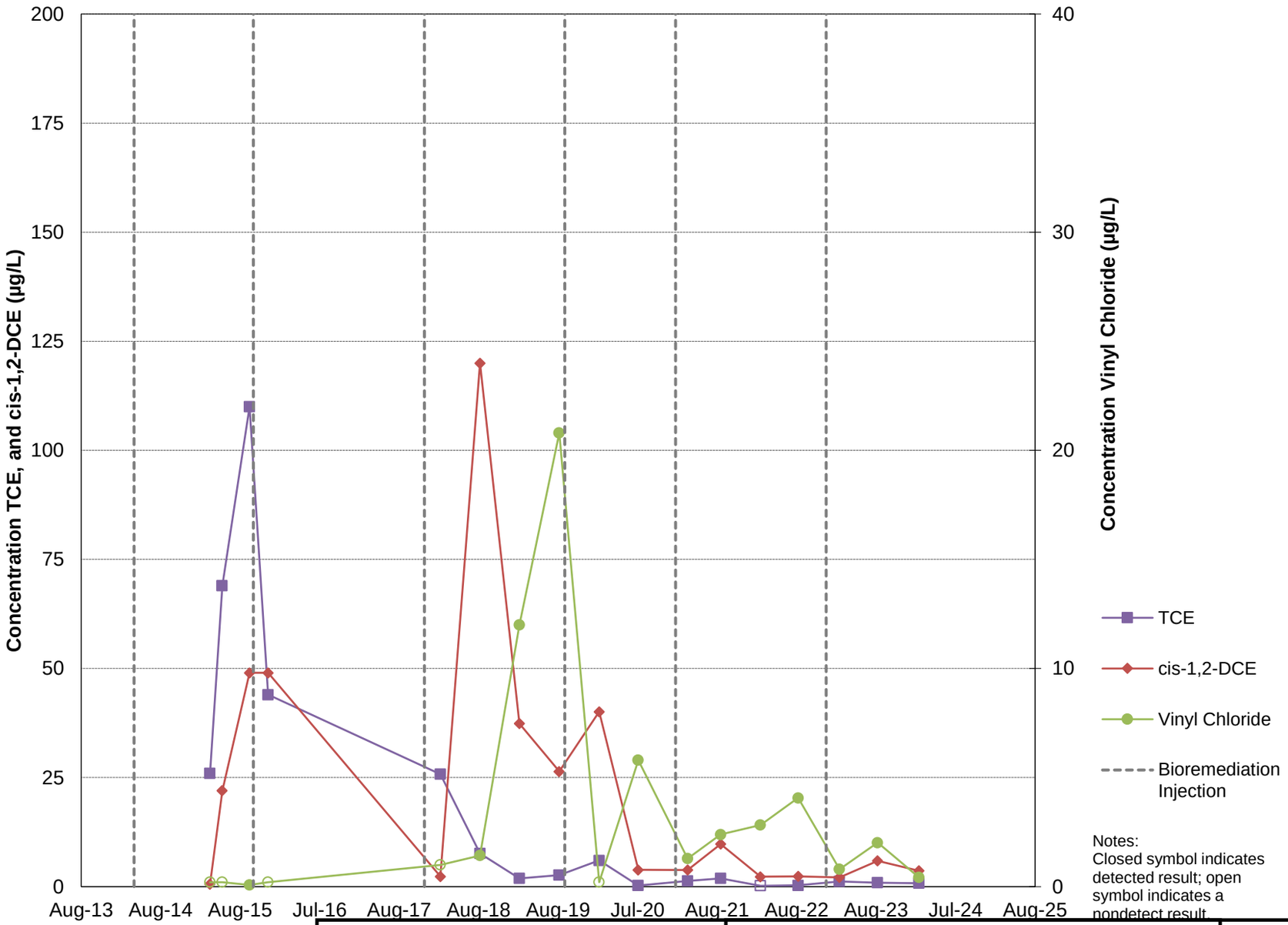
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW220 Time Series

Figure
1-9

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



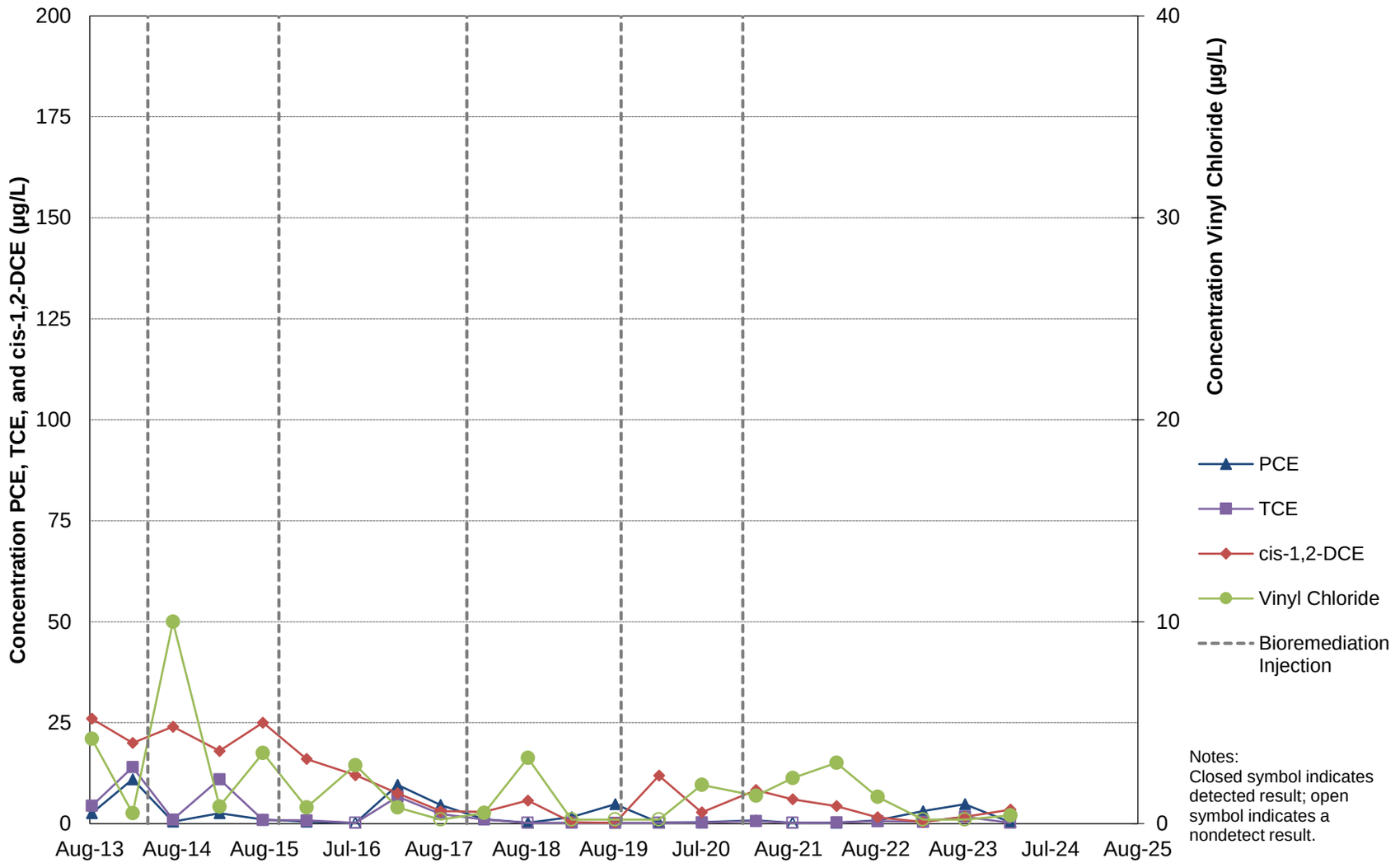
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-360 NGW607 Time Series

Figure
1-10

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



Notes:
Closed symbol indicates detected result; open symbol indicates a nondetect result.

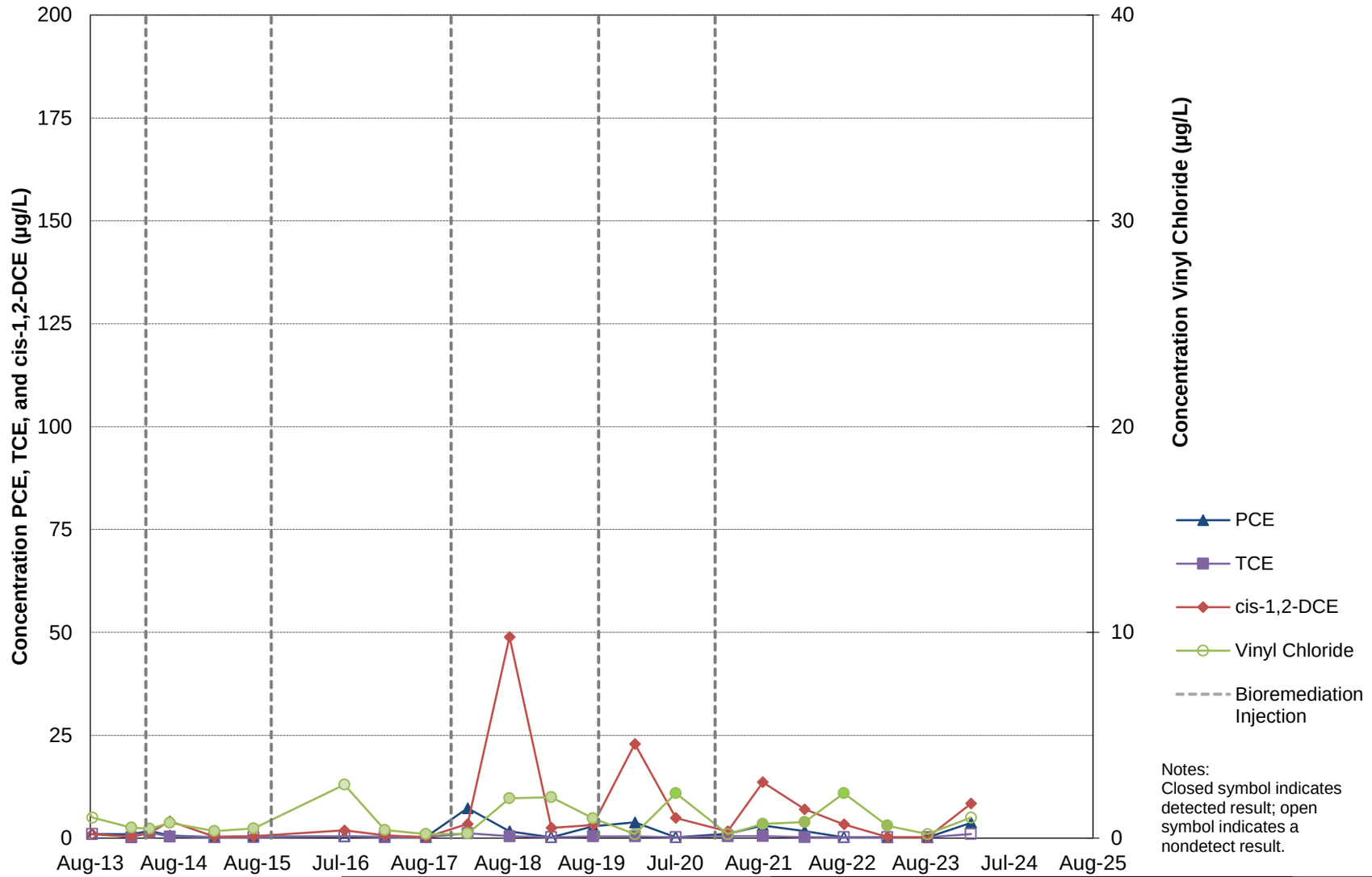
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-800 NGW301 Time Series

Figure
1-11

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



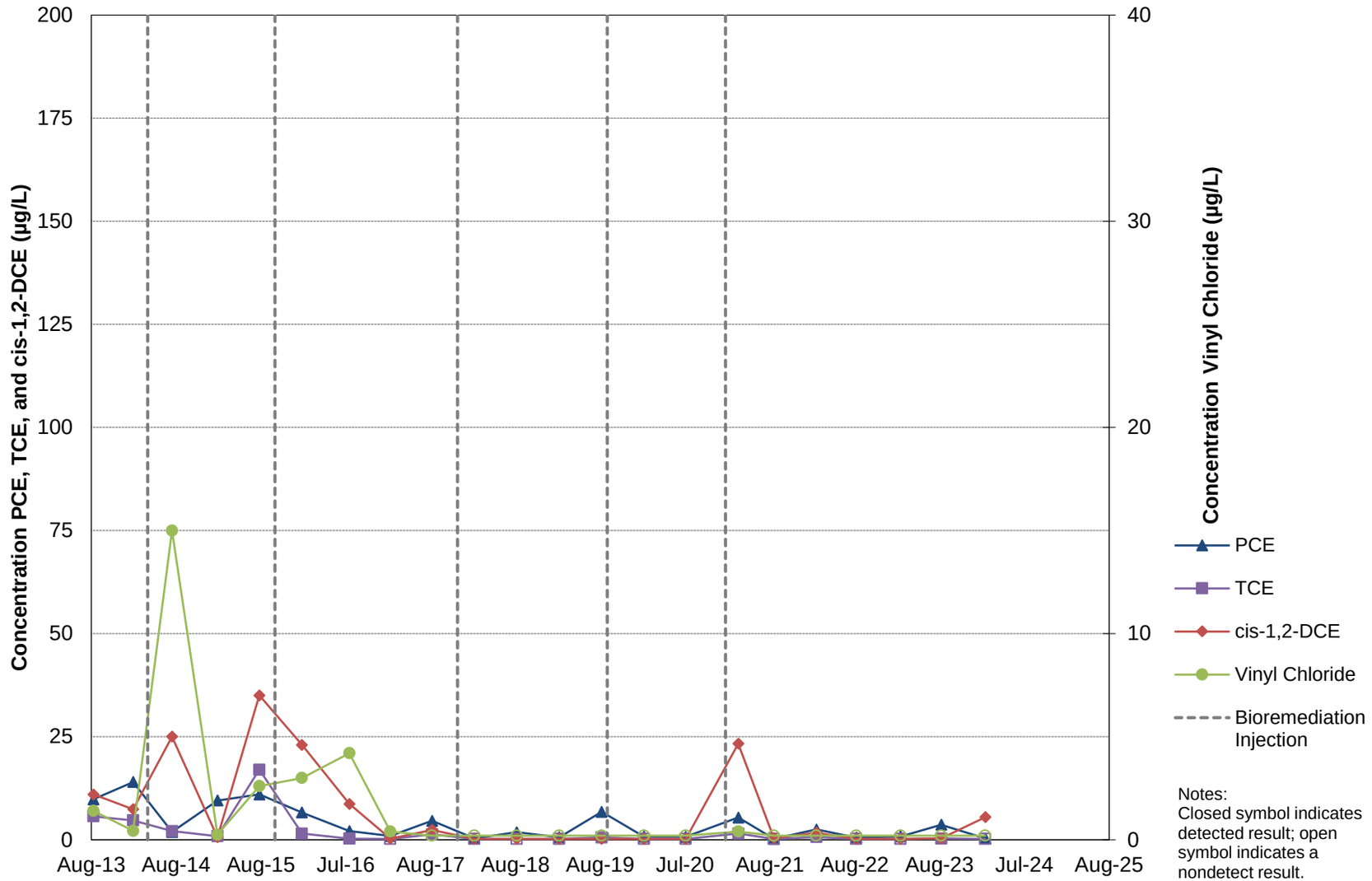
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-800 NGW307 Time Series

Figure
1-12

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



Notes:
Closed symbol indicates detected result; open symbol indicates a nondetect result.

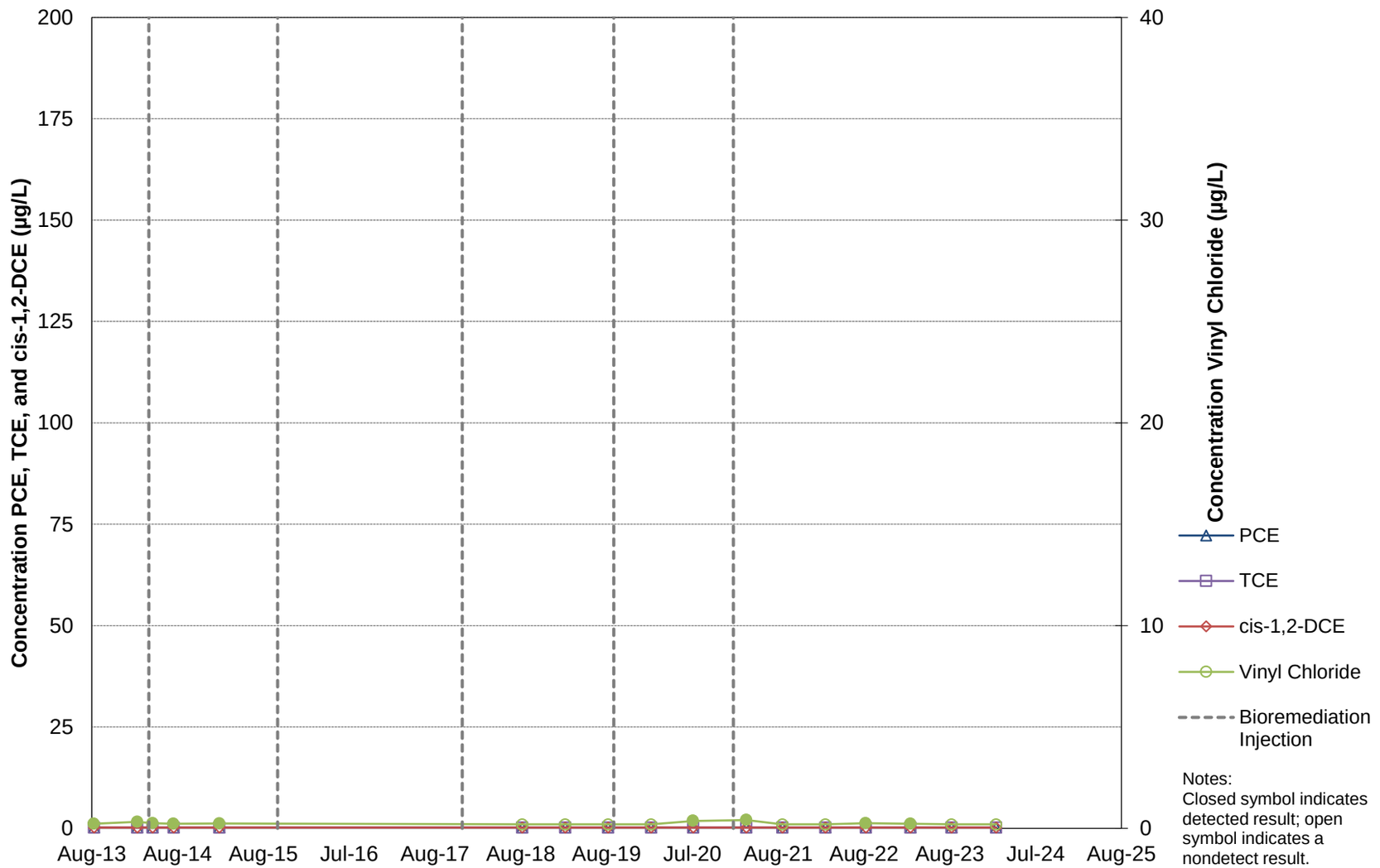
LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-800 NGW308 Time Series

Figure
1-13

P:\025\082\.915 RI-FS\M\Progress Reports - Quarterly\2024\1Q24\Attachments\Attach 1_NBF Plots 1Q24



LANDAU ASSOCIATES

North Boeing Field
Seattle, Washington

Area 3-800 NGW309 Time Series

Figure
1-14

ATTACHMENT 2

Laboratory Data Packages

Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

12 March 2024

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

RE: NBF Regional GW Program (0025217.004.099.079)

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
24B0347	N/A

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

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

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

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

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

24B0347

LANDAU ASSOCIATES Chain-of-Custody Record

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

Date 02/14/2024
Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name Boeing-NBF Regional GW Project No. 00252I7.004.004.079
Project Location/Event North Boeing Field / February GW 2024
Sampler's Name Graham Johnson
Project Contact Chris Kimmel
Send Results To Chris Kimmel ckimmel@landauinc.com

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

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (8260D) PCE, TCE, cis-1,2-DCE, VC only	TOC (SM5310C) RL=1.0mg/L	Observations/Comments
NGW201-240214	02/14/24	1005	Aq	4	X	X	
NGW203-240214		1135	Aq		X	X	
NGW206-240214		1225			X	X	
NGW207-240214		1050			X	X	
NGW208-240214		1058			X	X	
NGW211-240214		1351			X	X	
NGW212-240214		1315			X	X	
NGW220-240214		1431			X	X	
NGW607-240214		1201			X	X	
NGW301-240214		1500		12	X	X	
NGW307-240214		1545		4	X	X	
NGW308-240214		1541			X	X	
NGW309-240214		1420			X	X	
FS27-A-240214		0950			X	X	
NGWDUP-240214		0901			X	X	
~~Trip Blank~~	02/14/24		Aq	4	X	X	

Testing Parameters

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

Other _____

GJ

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Graham Johnson	Printed Name Matthew Beam	Printed Name	Printed Name
Company LAI	Company ARI	Company	Company
Date 02/14/24 Time 1705	Date 02/14/24 Time 1705	Date Time	Date Time

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

24B0347

Chain-of-Custody Record

LANDAU ASSOCIATES

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

Date 2/14/2024 Page 1 of 1

Turnaround Time: Standard / Accelerated

Project Name [illegible] Project No. [illegible]

Project Location/Event [illegible]

Sampler's Name Graham Johnson

Project Contact [illegible]

Send Results To [illegible]

Special Handling Requirements:

Shipment Method: Drive off

Stored on ice: Yes / No

Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters	Observations/Comments
[illegible]	02/14/24	1006	Aq	4	X X	
[illegible]		1135			X X	
[illegible]		1225			X X	
[illegible]		1050			X X	
[illegible]		1054			X X	
[illegible]		1351			X X	
[illegible]		1315			X X	
[illegible]		1431			X X	
[illegible]		1201			X X	
[illegible]		1500		12	X X	
[illegible]		1545		4	X X	
[illegible]		1541			X X	
[illegible]		1420			X X	
SC7-A-240214		0950			X X	
[illegible]		0901			X X	
~~Trip Blank~~ (GJ)	02/14/24		Aq	4	X X	

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

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

Dissolved metal samples were field filtered

Other

Trip Blanks seperated from samples at the end of sampling event. No trip blanks available.

Relinquished by	Received by	Relinquished by	Received by
Signature [illegible]	Signature	Signature	Signature
Printed Name Graham Johnson	Printed Name	Printed Name	Printed Name
Company LAL	Company	Company	Company
Date 2/14/24 Time 1705	Date Time	Date Time	Date Time

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

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NGW201-240214	24B0347-01	Water	14-Feb-2024 10:05	14-Feb-2024 17:05
NGW203-240214	24B0347-02	Water	14-Feb-2024 11:35	14-Feb-2024 17:05
NGW206-240214	24B0347-03	Water	14-Feb-2024 12:25	14-Feb-2024 17:05
NGW207-240214	24B0347-04	Water	14-Feb-2024 10:50	14-Feb-2024 17:05
NGW208-240214	24B0347-05	Water	14-Feb-2024 10:58	14-Feb-2024 17:05
NGW211-240214	24B0347-06	Water	14-Feb-2024 13:51	14-Feb-2024 17:05
NGW212-240214	24B0347-07	Water	14-Feb-2024 13:15	14-Feb-2024 17:05
NGW220-240214	24B0347-08	Water	14-Feb-2024 14:31	14-Feb-2024 17:05
NGW607-240214	24B0347-09	Water	14-Feb-2024 12:01	14-Feb-2024 17:05
NGW301-240214	24B0347-10	Water	14-Feb-2024 15:00	14-Feb-2024 17:05
NGW307-240214	24B0347-11	Water	14-Feb-2024 15:45	14-Feb-2024 17:05
NGW308-240214	24B0347-12	Water	14-Feb-2024 15:41	14-Feb-2024 17:05
NGW309-240214	24B0347-13	Water	14-Feb-2024 14:20	14-Feb-2024 17:05
FS27-A-240214	24B0347-14	Water	14-Feb-2024 09:50	14-Feb-2024 17:05
NGWDUP-240214	24B0347-15	Water	14-Feb-2024 09:01	14-Feb-2024 17:05

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Work Order Case Narrative

Volatiles - EPA Method SW8260D

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

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

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

Wet Chemistry

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

Initial and continuing calibrations were within method requirements.

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

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

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

WORK ORDER

24B0347

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

Client: The Boeing Company [North Boeing Field] **Project Manager:** Kelly Bottem

Project: NBF Regional GW Program **Project Number:** 0025217.004.099.079

Preservation Confirmation

Container ID	Container Type	pH	
24B0347-01 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-01 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-01 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-01 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-02 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-02 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-02 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-02 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-03 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-03 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-03 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-03 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-04 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-04 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-04 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-04 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-05 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-05 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-05 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-05 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-06 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-06 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-06 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-06 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-07 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-07 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-07 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-07 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-08 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-08 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-08 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-08 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-09 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-09 B	VOA Vial, Clear, 40 mL, HCL		

Reviewed By Date

WORK ORDER

24B0347

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

Client: The Boeing Company [North Boeing Field] **Project Manager:** Kelly Bottem

Project: NBF Regional GW Program **Project Number:** 0025217.004.099.079

24B0347-09 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-09 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
24B0347-10 B	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
24B0347-10 C	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-10 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 E	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 F	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 G	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 H	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 I	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 J	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 K	VOA Vial, Clear, 40 mL, HCL		
24B0347-10 L	VOA Vial, Clear, 40 mL, HCL		
24B0347-11 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-11 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-11 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-11 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-12 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-12 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-12 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-12 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-13 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	pass
24B0347-13 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-13 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-13 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-14 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
24B0347-14 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-14 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-14 D	VOA Vial, Clear, 40 mL, HCL		
24B0347-15 A	Glass NM, Amber, 250 mL, 9N H2SO4	<2	Pass
24B0347-15 B	VOA Vial, Clear, 40 mL, HCL		
24B0347-15 C	VOA Vial, Clear, 40 mL, HCL		
24B0347-15 D	VOA Vial, Clear, 40 mL, HCL		

Reviewed By Date

WORK ORDER

24B0347

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

Client: The Boeing Company |North Boeing Field|

Project Manager: Kelly Bottem

Project: NBF Regional GW Program

Project Number: 0025217.004.099.079

KFC
Preservation Confirmed By

02 1524
Date

Reviewed By

Date

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Landau

Project Name: NBF Feb. GW 2024

COC No(s): NA

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

Assigned ARI Job No: 24B0347

Tracking No: NA

Preliminary Examination Phase:

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

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

Time 1705 | 0.9oc | 0.4oc | | | | |

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

Temp Gun ID#: SC09708

Cooler Accepted by: MP Date: 02/14/24 Time: 1705

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

Samples Logged by: KFC Date: 02/15/24 Time: 0954 Labels checked by: KFC

***** 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 [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW201-240214

24B0347-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 10:05

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 14:10

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-01 D

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	5.40	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	1.34	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.9*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW201-240214

24B0347-01 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 10:05

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 12:08

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-01 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	113.6	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW203-240214

24B0347-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 11:35

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 14:32

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-02 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	4.14	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	10.7	ug/L	
Trichloroethene	79-01-6	1	0.20	0.58	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*114*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.9*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW203-240214

24B0347-02 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 11:35

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 12:30

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-02 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	225.1	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW206-240214

24B0347-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 12:25

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 14:54

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-03 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	2.09	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*114*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.2*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW206-240214

24B0347-03 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 12:25

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 12:54

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-03 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		5	2.50	2.50	39.24	mg/L	D

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW207-240214

24B0347-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 10:50

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 15:16

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-04 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.29	ug/L	
Trichloroethene	79-01-6	1	0.20	0.50	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*118*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*107*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW207-240214

24B0347-04 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 10:50

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 13:31

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-04 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		50	25.00	25.00	3587	mg/L	D

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW208-240214

24B0347-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 10:58

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 15:38

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-05 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	2.08	ug/L	
Trichloroethene	79-01-6	1	0.20	0.26	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*116*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*101*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW208-240214

24B0347-05 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 10:58

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 13:56

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-05 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	7.13	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW211-240214

24B0347-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 13:51

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 16:00

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-06 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.85	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	1.19	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*115*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*97.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.5*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW211-240214

24B0347-06RE1 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 13:51

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/11/2024 04:29

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-06RE1 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		10	5.00	5.00	565.4	mg/L	D

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW212-240214

24B0347-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 13:15

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 16:22

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-07 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	2.24	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	1.30	ug/L	
Trichloroethene	79-01-6	1	0.20	0.32	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*120*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW212-240214

24B0347-07RE1 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 13:15

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/06/2024 12:06

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-07RE1 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		10	5.00	5.00	552.6	mg/L	D

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW220-240214

24B0347-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 14:31

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 16:45

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-08 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	3.17	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	8.66	ug/L	
Trichloroethene	79-01-6	1	0.20	0.91	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*114*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW220-240214

24B0347-08 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 14:31

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 16:03

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-08 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	223.3	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW607-240214

24B0347-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 12:01

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 17:07

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-09 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.46	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	3.76	ug/L	
Trichloroethene	79-01-6	1	0.20	0.84	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*119*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.8*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW607-240214

24B0347-09 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 12:01

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 16:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-09 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		18.38	9.19	9.19	674.9	mg/L	D

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW301-240214

24B0347-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 15:00

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 17:29

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-10 E

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.41	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	3.49	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	0.38	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*118*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.2*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW301-240214

24B0347-10 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 15:00

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 16:57

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-10 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	177.4	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW307-240214

24B0347-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 15:45

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 17:54

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-11 B

Preparation Batch: BMB0422 — Sample Size: 2 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	1.00	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	1.00	8.42	ug/L	
Trichloroethene	79-01-6	1	1.00	ND	ug/L	U
Tetrachloroethene	127-18-4	1	1.00	3.76	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*119*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*103*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*104*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW307-240214

24B0347-11RE1 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 15:45

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/06/2024 12:32

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-11RE1 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		50	25.00	25.00	8534	mg/L	D

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW308-240214

24B0347-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 15:41

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 18:16

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-12 B

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	5.49	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	0.31	ug/L	
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*120*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.6*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW308-240214

24B0347-12 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 15:41

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 18:41

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-12 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	72.79	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW309-240214

24B0347-13 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 14:20

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 18:38

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-13 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*115*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.0*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGW309-240214

24B0347-13 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 14:20

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 19:00

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-13 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	30.57	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

FS27-A-240214

24B0347-14 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 09:50

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 19:00

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-14 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.21	ug/L	
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*111*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*96.4*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

FS27-A-240214

24B0347-14 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 09:50

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 19:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-14 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.50	0.50	6.98	mg/L	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGWDUP-240214

24B0347-15 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/14/2024 09:01

Instrument: NT3 Analyst: PKC — Analyzed: 02/15/2024 19:22

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 24B0347-15 C

Preparation Batch: BMB0422 — Sample Size: 10 mL

Prepared: 02/15/2024 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.43	ug/L	
cis-1,2-Dichloroethene	156-59-2	1	0.20	3.64	ug/L	
Trichloroethene	79-01-6	1	0.20	0.81	ug/L	
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*121*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

NGWDUP-240214

24B0347-15 (Water)

Wet Chemistry

Method: SM 5310 B-11 — Sampled: 02/14/2024 09:01

Instrument: TOC-LCSH Analyst: RMS — Analyzed: 03/05/2024 20:36

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 24B0347-15 A

Preparation Batch: BMC0086 — Sample Size: 20 mL

Prepared: 03/05/2024 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		8	4.00	4.00	693.1	mg/L	D

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMB0422 - EPA 8260D

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMB0422-BLK1)				Prepared: 15-Feb-2024 Analyzed: 15-Feb-2024 09:04						
Vinyl Chloride	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.54		ug/L	*5.00*		*90.8*	*80-129*			
Surrogate: Toluene-d8	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.72		ug/L	*5.00*		*94.4*	*80-120*			

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMB0422 - EPA 8260D

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BMB0422-BS1)				Prepared: 15-Feb-2024 Analyzed: 15-Feb-2024 07:36						
Vinyl Chloride	9.50	0.20	ug/L	10.0		95.0	66-133			
cis-1,2-Dichloroethene	10.3	0.20	ug/L	10.0		103	80-121			
Trichloroethene	9.78	0.20	ug/L	10.0		97.8	80-120			
Tetrachloroethene	9.66	0.20	ug/L	10.0		96.6	80-120			
Surrogate: 1,2-Dichloroethane-d4	5.50		ug/L	*5.00*		*110*	*80-129*			
Surrogate: Toluene-d8	5.02		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.90		ug/L	*5.00*		*98.1*	*80-120*			

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMB0422 - EPA 8260D

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BMB0422-BSD1)				Prepared: 15-Feb-2024 Analyzed: 15-Feb-2024 08:20						
Vinyl Chloride	11.0	0.20	ug/L	10.0		110	66-133	14.70	30	
cis-1,2-Dichloroethene	11.3	0.20	ug/L	10.0		113	80-121	9.55	30	
Trichloroethene	10.9	0.20	ug/L	10.0		109	80-120	10.70	30	
Tetrachloroethene	11.0	0.20	ug/L	10.0		110	80-120	12.70	30	
Surrogate: 1,2-Dichloroethane-d4	5.36		ug/L	*5.00*		*107*	*80-129*			
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.95		ug/L	*5.00*		*99.0*	*80-120*			

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMB0422 - EPA 8260D

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BMB0422-MS1)	**Source: 24B0347-10**		Prepared: 15-Feb-2024 Analyzed: 15-Feb-2024 19:44							
Vinyl Chloride	8.06	0.20	ug/L	10.0	0.41	76.6	66-133			
cis-1,2-Dichloroethene	10.6	0.20	ug/L	10.0	3.49	70.6	80-121			*
Trichloroethene	7.39	0.20	ug/L	10.0	ND	72.9	80-120			*
Tetrachloroethene	7.45	0.20	ug/L	10.0	0.38	70.7	80-120			*
Surrogate: 1,2-Dichloroethane-d4	6.22		ug/L	*5.00*	*5.88*	*124*	*80-129*			
Surrogate: Toluene-d8	5.04		ug/L	*5.00*	*4.99*	*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.82		ug/L	*5.00*	*4.91*	*96.4*	*80-120*			

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

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMB0422 - EPA 8260D

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BMB0422-MSD1)	**Source: 24B0347-10**		Prepared: 15-Feb-2024 Analyzed: 15-Feb-2024 20:06							
Vinyl Chloride	8.53	0.20	ug/L	10.0	0.41	81.3	66-133	5.66	30	
cis-1,2-Dichloroethene	10.9	0.20	ug/L	10.0	3.49	74.5	80-121	3.57	30	*
Trichloroethene	7.77	0.20	ug/L	10.0	ND	76.6	80-120	4.96	30	*
Tetrachloroethene	8.24	0.20	ug/L	10.0	0.38	78.6	80-120	10.00	30	*
Surrogate: 1,2-Dichloroethane-d4	6.18		ug/L	*5.00*	*5.88*	*124*	*80-129*			
Surrogate: Toluene-d8	5.02		ug/L	*5.00*	*4.99*	*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.27		ug/L	*5.00*	*4.91*	*105*	*80-120*			

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

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMB0422 - EPA 8260D

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMC0086 - SM 5310 B-11

Instrument: TOC-LCSH Analyst: RMS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BMC0086-BLK1)					Prepared: 05-Mar-2024 Analyzed: 05-Mar-2024 11:22						
Total Organic Carbon	ND	0.50	0.50	mg/L							U
LCS (BMC0086-BS1)					Prepared: 05-Mar-2024 Analyzed: 05-Mar-2024 11:45						
Total Organic Carbon	20.11	0.50	0.50	mg/L	20.00		101	90-110			
Duplicate (BMC0086-DUP1)		**Source: 24B0347-10**			Prepared: 05-Mar-2024 Analyzed: 05-Mar-2024 17:20						
Total Organic Carbon	177.4	0.50	0.50	mg/L		177.4			0.00		
Matrix Spike (BMC0086-MS1)		**Source: 24B0347-10**			Prepared: 05-Mar-2024 Analyzed: 05-Mar-2024 17:42						
Total Organic Carbon	191.7	0.50	0.50	mg/L	20.00	177.4	71.5	75-125			HC

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

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Certified Analyses included in this Report

Analyte	Certifications
EPA 8260D in Water	
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
SM 5310 B-11 in Water	
Total Organic Carbon	WA-DW,WADOE,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2024
WADOE	WA Dept of Ecology	C558	06/30/2024
WA-DW	Ecology - Drinking Water	C558	06/30/2024

The Boeing Company [North Boeing Field]	Project: NBF Regional GW Program	
PO Box 3703 MS 2R-96	Project Number: 0025217.004.099.079	**Reported:**
Seattle WA, 98124	Project Manager: Jennifer Parsons	12-Mar-2024 10:29

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
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.