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March 15, 2024
Project No. M0747.01.014

Michael R. Warfel, LG, LHG, RG
Washington State Department of Ecology
15700 Dayton Avenue N
Shoreline, Washington 98133

Re: Compliance Groundwater Monitoring Event
North Cascade Ford Property, Sedro-Woolley, Washington
VCP Number: NW3031; CSID: 12075; FSID: 5813566

Dear Michael Warfel:

In December 2023, on behalf of VSF Properties, LLC, Maul Foster & Alongi, Inc. (MFA), conducted monitoring well sampling activities at the North Cascade Ford property, located at 116 W Ferry Street in Sedro-Woolley, Washington (the Property) (see Figure 1). The North Cascade Ford Site (the Site) includes the Property and a portion of the adjacent property to the north, owned by the BNSF Railway (see Figures 1 and 2).

Activities were conducted consistent with the Confirmation Groundwater Monitoring Plan (CGMP) described in environmental covenant no. 202210190027 recorded in Skagit County (Environmental Covenant), the groundwater compliance monitoring plan (CMP) (MFA 2020a), the addendum to the groundwater CMP (MFA 2020c), and the Washington State Model Toxics Control Act (MTCA; Washington Administrative Code 173-340-410(b)) requirements for performance monitoring.

Background

Previous investigations identified environmental impacts in three areas of the Site, referred to as areas of concern (AOCs) 1 through 3 (MFA 2020b). In March 2020, a remedial action was completed in AOCs 1 through 3 (MFA 2020b). Following completion of the remedial action, the groundwater CMP and an associated addendum were developed in coordination with the Washington State Department of Ecology (Ecology) to guide performance groundwater monitoring at the Site (MFA 2020a, 2020c). Per Washington Administrative Code 173-340(b), the purpose of performance monitoring is to confirm that a remedial action has attained cleanup levels (CULs). Eight quarterly compliance groundwater monitoring events related to the March 2020 remedial action were conducted between September 2020 and June 2022 (MFA 2020d, 2021a, 2021b, 2021c, 2021d, 2022a, 2022b, 2022c).

Chemicals of concern in AOCs 1 through 3 include diesel-range organics (DRO), lube-oil-range organics (ORO), gasoline-range organics, BTEX constituents (benzene, toluene, ethylbenzene, and total xylenes), and/or total naphthalenes. Groundwater compliance monitoring is limited to DRO and ORO following Ecology approval on September 9, 2021 and the CGMP (Ecology 2021a). Table 1 shows historical groundwater analytical results associated with monitoring wells in AOCs 1 and 2 and reconnaissance groundwater samples collected in AOC 3 prior to initiating compliance monitoring in September 2020.

On September 9, 2021, Ecology approved the reduction of monitoring for constituents at the Site (i.e., limiting monitoring to DRO and ORO), as well as the removal of monitoring wells MW06 and MW12 from the compliance monitoring network (Ecology 2021a).

On December 10, 2021, Ecology requested additional analysis for two monitoring wells—1,4-dichlorobenzene for MW09 and naphthalenes for MW10—due to previous detections in those areas of the Site above the vapor intrusion screening level (Ecology 2021b). These additional constituents were not detected in groundwater analyses conducted during the December 2021 monitoring event at MW09 and MW10. On March 15, 2022, Ecology concurred with eliminating sampling for naphthalenes and 1,4-dichlorobenzene for future groundwater monitoring events (Ecology 2022a).

On April 6, 2022, Ecology approved the removal of monitoring well MW11 from the compliance monitoring network (Ecology 2022b).

On January 4, 2023, Ecology presented its No Further Action (NFA) opinion for the Property contingent upon the continued performance and effectiveness of the post-cleanup controls and monitoring specified in the NFA letter and the environmental covenant no. 202210190027 for institutional controls (Ecology 2023a).

On March 2, 2023, the first compliance groundwater monitoring report was submitted to Ecology, conducted in November 2022, related to the post-cleanup controls and monitoring specified in the NFA letter and the environmental covenant no. 202210190027 for institutional controls (MFA 2023a).

On June 12, 2023, the City of Sedro-Woolley informed Ecology that railroad ties were temporarily stored on the Property. It was determined that three monitoring wells (MW01R, MW09, and MW10) were damaged, and the gravel cap was disturbed from the placement of railroad ties. The damaged monitoring wells were decommissioned, and three replacement wells (MW01R2, MW09R, and MW10R) were installed and developed in September and October 2023 in accordance with the Ecology-approved work plan (Ecology 2023b, MFA 2023b). Gravel contaminated with railroad tie debris was excavated and removed from the Property. Clean imported gravel was placed on the Property to restore the gravel areas. A completion report summarizing restoration activities was submitted to Ecology on October 27, 2023 (MFA 2023c).

On October 30, 2023, Ecology concurred restoration was complete and presented a Resolution of Non-Compliance with Terms of Environmental Covenant for the Property (Ecology 2023c).

Field and Analytical Methods

All December 2023 groundwater monitoring activities were conducted consistent with the CGMP; the groundwater CMP (MFA 2020a), the addendum to the groundwater CMP (MFA 2020c), and Ecology-approved modifications to the CMP provided via email (Ecology 2021a, 2021b, 2022a, 2022b). Compliance monitoring well locations are shown on Figure 2.

Potentiometric Surface Evaluation

On December 18, 2023, MFA measured static water levels in the compliance monitoring wells (see Table 2). A potentiometric surface map is provided as Figure 3. The estimated potentiometric surface contours indicate that shallow groundwater at the Site is variable and show groundwater migration to the south with some localized variations, consistent with previous observations. Water levels measured during this event were generally 0.2 feet lower than levels in the November 2022

monitoring event. The average height of the water table in December 2023 was approximately three feet lower than in December 2021 and a half foot lower than in December 2020.

Monitoring Well Sampling

On December 18, 2023, MFA collected seven groundwater samples from six compliance monitoring wells on the Property (MW01R2, MW02R, MW04, MW07, MW09R, and MW10R), including a field duplicate sample from monitoring well MW10R. Water quality field parameters (temperature, specific conductance, pH, dissolved oxygen, oxygen reduction potential, and turbidity) were stabilized before sample collection. During purging, the flow rates, water levels, and water quality parameters were recorded on field sampling data sheets (see Attachment A). Under standard chain-of-custody procedures, groundwater samples were submitted to Friedman & Bruya, Inc., of Seattle, Washington, for laboratory analysis.

Results

The laboratory analytical report is provided as Attachment B, and analytical data are presented in Table 3. Exceedances of the MTCA Method A CUL for DRO and heavy oils (the sum of DRO and ORO) are shown on Figure 4, and site trends for DRO, ORO, and heavy oils are presented in Figures 5, 6, and 7, respectively. Figure 8 shows the site trends for heavy oils from 2019 to 2023 to more clearly depict concentration trends that have occurred since the 2020 remedial action. Analytical data and the laboratory's internal quality assurance and quality control data were reviewed to assess whether they met project-specific data quality objectives. A data validation memorandum summarizing data evaluation procedures, data usability, and deviations from specific field and/or laboratory methods is included as Attachment C. The data, with the appropriate data qualifiers assigned, are considered acceptable for their intended use. Friedman & Bruya, Inc. flagged all detected NWTPH-Dx diesel-range hydrocarbons results for having chromatographic patterns that did not resemble the fuel standards used for quantitation. These results were reported as diesel-range hydrocarbons instead of specific fuel products; thus, qualification was not required.

All groundwater samples were analyzed for DRO and ORO, and heavy oils were calculated by summing DRO and ORO concentrations (one-half the method reporting limit is used for non-detect values) for comparison to the DRO MTCA Method A CUL.

AOC 1: Former Auto Repair Shop

Three groundwater samples were collected from AOC 1 monitoring wells: one each from MW01R2, MW07, and MW09R.

All detections of DRO and ORO, as well as the sum of heavy oils in AOC 1, were below their respective MTCA Method A CULs. This is the fifth consecutive monitoring event with all monitoring wells having concentrations of heavy oils either non-detect or below their respective MTCA Method A CULs.

AOC 2: Former Underground Storage Tanks

Four groundwater samples, including one field duplicate at MW10R, were collected from AOC 2 monitoring wells MW02R, MW04, and MW10R.

Detections of DRO, ORO, and heavy oils in groundwater samples at MW04 and MW10R were below their respective MTCA Method A CULs. ORO was not detected at MW02R; however, DRO (1,300 ug/L) and heavy oils (1,425 ug/L) exceeded the MTCA Method A CUL of 500 ug/L.

Variable, localized components of flow have been observed at monitoring wells within AOC 2 (MW10R, MW02R, and MW04) since monitoring began in September 2020. This is likely due to the

different hydraulic conductivity of the coarser grained backfill material used during the 2016 interim remedial action relative to the finer grained surrounding native material. The overall water table observed in late 2023 was much lower than observed in previous years during this same period. Washington State issued a statewide drought advisory in July 2023 that is still in effect as of March 7, 2024 (Ecology 2023d, 2024). The drought in the region likely resulted in a very low water table preceding this event. The elevated detection of DRO at MW02R observed during this event is likely the result of a rising water table mobilizing residual localized petroleum product present in the vadose zone as precipitation events increase in the region and raise the water table through the coarser grained material surrounding MW02R, consistent with similar concentrations observed during late fall/early winter events (e.g., November 2022, December 2021, and December 2020).

Historically, we have observed more elevated concentrations at MW02R when there is a localized flow direction to the south within AOC 2, which has been generally correlated with lowering concentrations of heavy oils at MW10/MW10R. Monitoring well MW04 has consistently had concentrations of heavy oils below the MTCA A CULs since compliance monitoring began in September 2020 (totaling 11 sampling events). This suggests the residual concentrations of heavy oils in AOC 2 are limited to the localized area between MW10/MW10R and MW02R, in the coarser grained material used as backfill following the 2016 interim remedial action. It is anticipated that the concentrations of heavy oils will continue to have seasonal fluctuations as the residual petroleum concentrations remain localized in the backfill material of AOC 2 and are unlikely to migrate to other areas of the Property.

AOC 3: Former Coal Storage Sheds/Possible Buried Object

Ecology approved the removal of MW11 from the compliance monitoring network (Ecology 2022b). Therefore, no groundwater samples were collected from AOC 3.

Summary

Results from the groundwater monitoring indicate the following:

- AOC 1
  - No detections of DRO, ORO, or heavy oils exceeded their respective MTCA Method A CULs at MW01R2, MW07, and MW09R.
  - MW01R/MW01R2 has had ten consecutive monitoring events of DRO, ORO, and heavy oils concentrations below their respective MTCA Method A CULs.
  - MW07 has had six consecutive monitoring events of DRO, ORO, and heavy oils concentrations below their respective MTCA Method A CULs.
  - MW09/MW09R has had five consecutive monitoring events of DRO, ORO, and heavy oils concentrations below their respective MTCA Method A CULs.
- AOC 2
  - No detections of DRO or ORO or heavy oils exceeded their respective MTCA Method A CULs at MW04 and MW10/MW10R.
  - DRO and heavy oils exceeded the MTCA Method A CUL in MW02R.
  - MW04 has had 11 consecutive monitoring events of DRO, ORO, and heavy oils concentrations below their respective MTCA Method A CULs.
  - MW10/MW10R has had two consecutive monitoring events of DRO, ORO, and heavy oils concentrations below their respective MTCA Method A CULs.

- AOC 3
  - Compliance monitoring has been discontinued in this AOC.

Recommendations

Ten monitoring events have been completed at the Property since the remedial action completed in spring 2020 in accordance with the CGMP, CMP, and subsequent revisions approved by Ecology (MFA 2020a, 2020b, Ecology 2021a 2021b, 2022a, 2022b). Trend plots show heavy oil concentrations are generally decreasing and/or stabilizing below the Method A CUL in monitoring wells during the compliance monitoring period (see Figures 5 through 8). Additionally, free product has not been observed since quarterly compliance groundwater monitoring began in September 2020. CULs have been met at all monitoring network wells for more than four consecutive events except at MW02R and MW10; however, consistent with the monitoring frequency and requirements outlined in the environmental covenant no. 202210190027, the next monitoring event is planned in 15-months in March 2025.

It is anticipated that additional modifications to the groundwater CMP would be assessed during the first periodic review in 2027.

If you have any questions, please feel free to contact us.

Sincerely,

Maul Foster & Alongi, Inc.

State of Washington
Hydrogeologist
19110670
Licensed Geologist
CAROLYN ROCHELLE WISE
03-15-2024

Carolyn R. Wise, LHG
Project Hydrogeologist

Brenden Murphy
Staff Environmental Scientist

Attachments

References
Limitations
Figures
Tables
A—Water FSDS
B—Analytical Lab Report
C—Data Validation Memorandum

cc: Larry Setchel, Setchell NW Legal Services, P.S.

References

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Ecology. 2023b. M. Warfel, Washington State Department of Ecology. Non-Compliance with Terms of Environmental Covenant, North Cascade Ford Site, 116 West Ferry Street, Sedro Woolley, Washington, 98284, Facility/Site No. 68313566; Cleanup Site No. 12075. Letter to J. Krivanek. June 22.

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MFA. 2020c. J. Maul, Maul Foster & Alongi, Inc. Addendum to Groundwater Compliance Monitoring Plan, North Cascade Ford Property, 116 W. Ferry Street, Sedro-Woolley, Washington, Facility Site ID: 58313566; Cleanup Site ID: 12075. Memorandum to M. Warfel, Washington State Department of Ecology. August 10.

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MFA. 2021b. M. Murray and C. Wise, Maul Foster & Alongi, Inc. Third Quarterly Compliance Groundwater Monitoring Event, North Cascade Ford Property, Sedro-Woolley, Washington, VCP Number: NW3031, CSID: 12075, FSID: 58313566. Letter to M. Warfel, Washington State Department of Ecology. April 8.

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Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Figures

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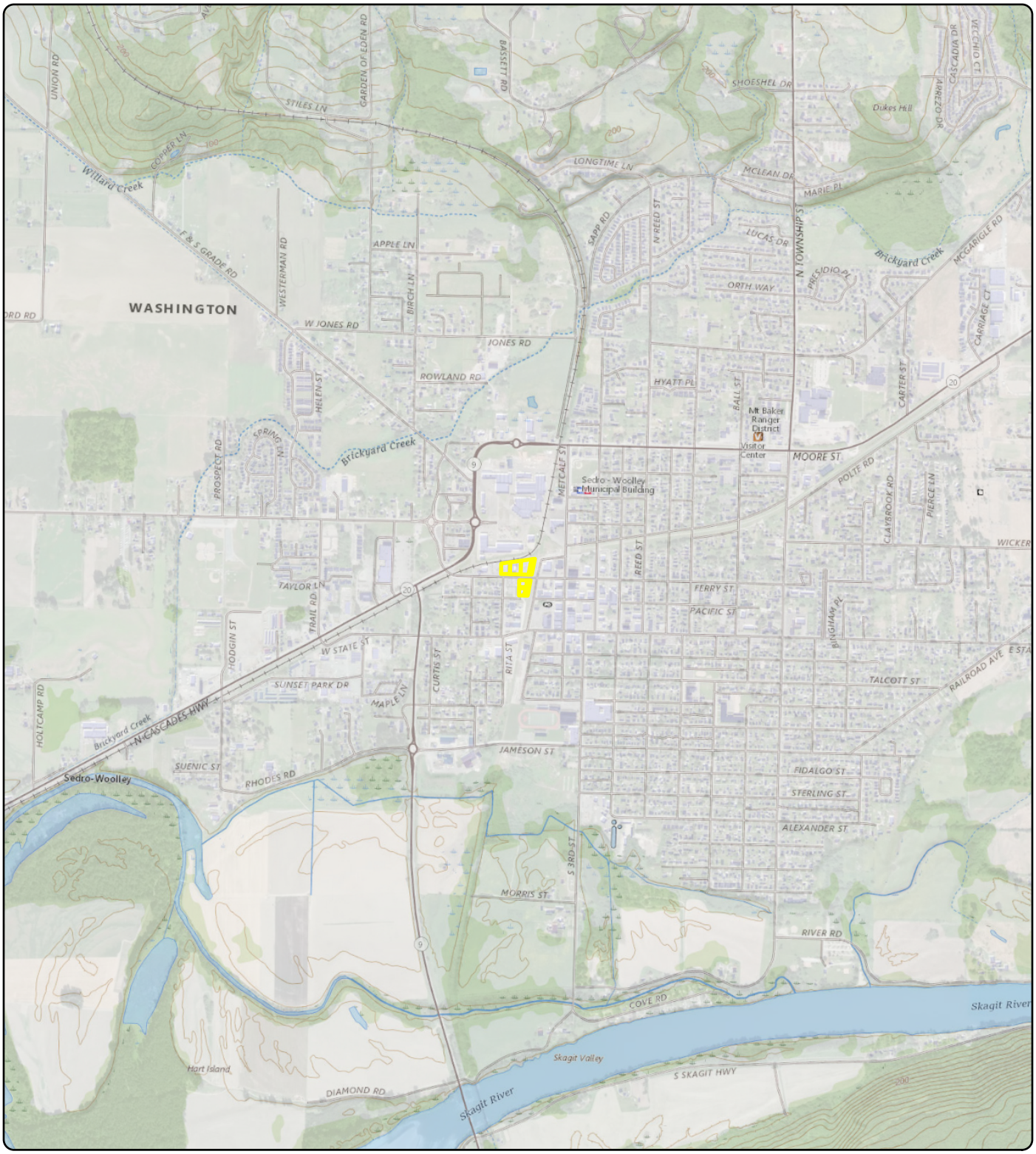

Notes
U.S. Geological Survey 7.5-minute topographic quadrangle (2020): Sedro-Woolley North.
Township 35 north, range 4 east, section 24.

Legend

Property Boundary

Figure 1
Property Location

North Cascade Ford Property
Sedro-Woolley, Washington

0 1,000 2,000
Feet

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Path: X:\0747.01\14\Pro\M0747_01_014_004.aprx\Fig 1 Property Location
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Reviewed By: bmurphy
Produced By: sturner
Project: M0747.01.014

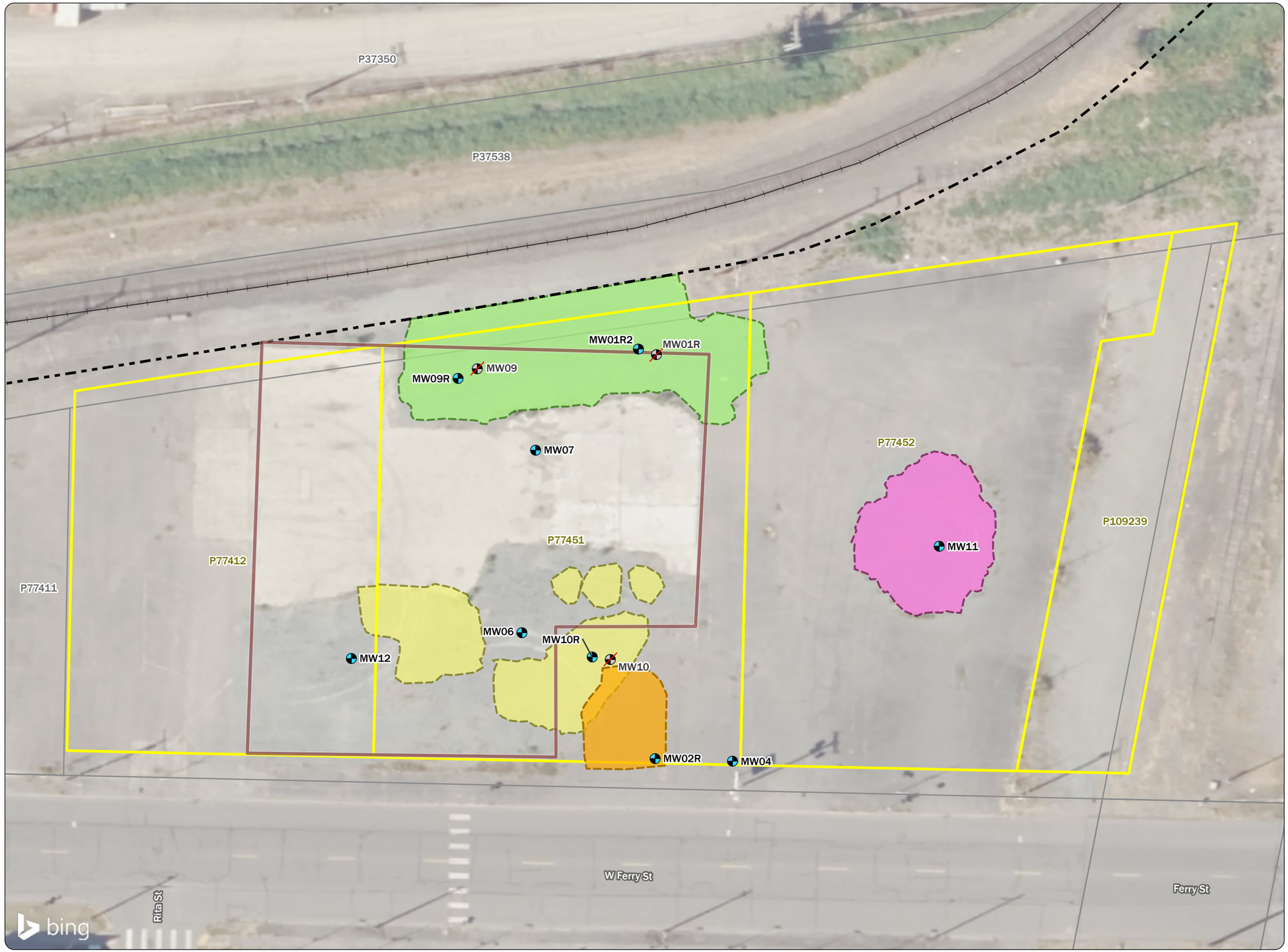

Figure 2
Compliance Monitoring Well Network

North Cascade Ford Property
Sedro-Woolley, WA

Legend

- Monitoring Well
- Decommissioned Monitoring Well
- UST Interim Action (MFA, 2016)
- Former Building Footprint
- Environmental Covenant Parcel (Surveyed)
- AOC 1 Excavation
- AOC 2 Excavation
- AOC 3 Excavation
- Parcel (Skagit County GIS)
- BNSF Railway
- BNSF Railway Centerline 25-foot Setback

Notes

All features are approximate.
The excavations areas are set back from the BNSF railroad centerline by 25 feet.
The surveyed environmental covenant parcel boundaries do not coincide with the adjacent parcel boundaries obtained from Skagit County; therefore, there is an overlap between the surveyed parcels and BNSF parcels.
AOC = area of concern.
BNSF = Burlington Northern Santa Fe Railway.
Environmental covenant parcel = North Cascade Ford Property.

0 30
Feet

Data Sources

Aerial photograph obtained from Microsoft Bing; parcel data obtained from Skagit County; excavation extents surveyed by Pacific Geomatic Services, Inc. in March 2020; environmental covenant parcel boundaries surveyed by Wilson Engineering, LLC.

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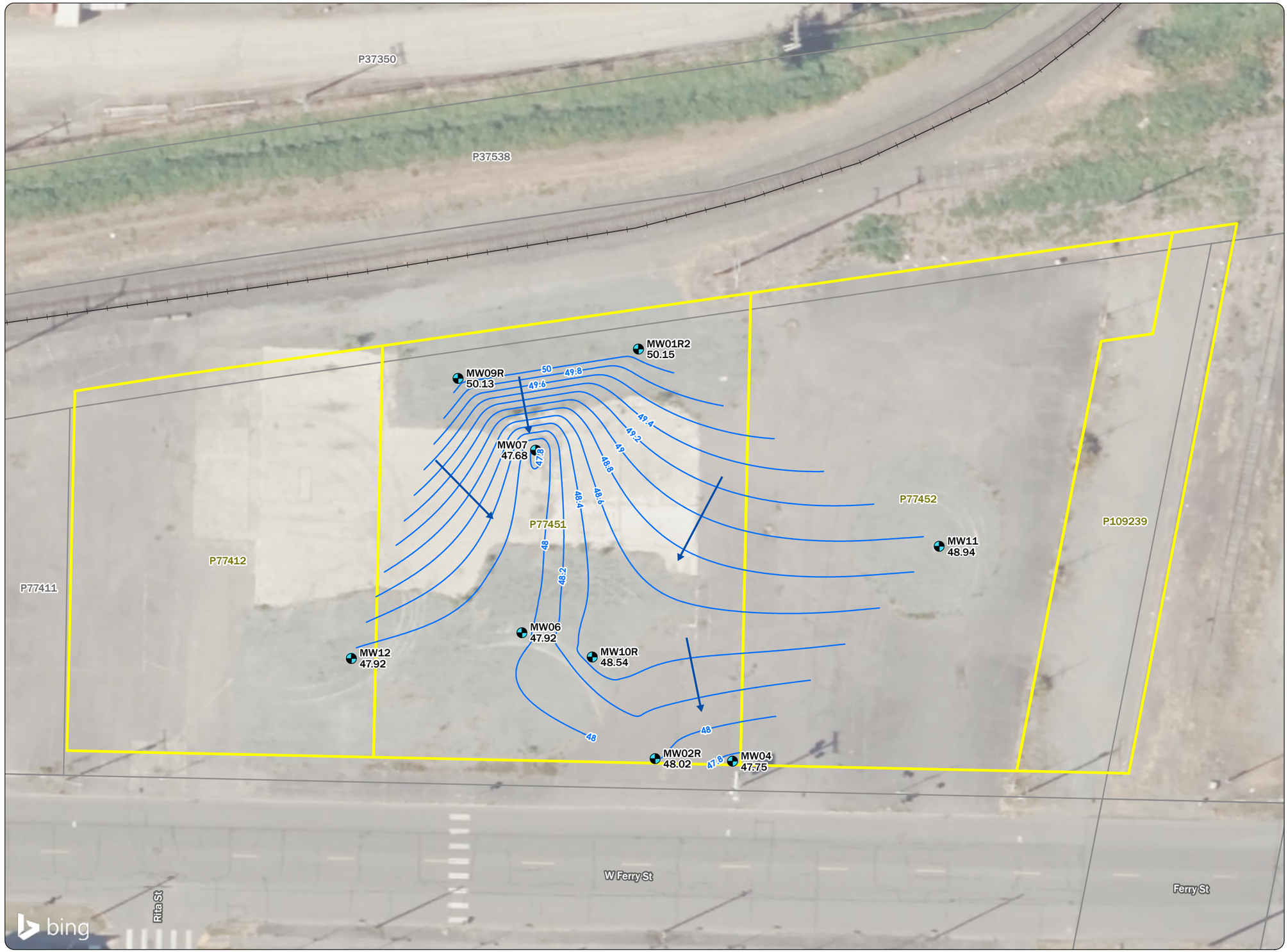
Figure 3
Groundwater Elevation Contours: December 2023

North Cascade Ford Property
Sedro-Woolley, WA



Legend

- Monitoring Well
- Groundwater Elevation Contour (feet NAVD 88)
- Approximate Groundwater Flow Direction
- BNSF Railway
- Environmental Covenant Parcel (Surveyed)
- Parcel (Skagit County GIS)

Notes

Water levels measured on December 18, 2023.
All features are approximate.
The surveyed environmental covenant parcel boundaries do not coincide with the adjacent parcel boundaries obtained from Skagit County; therefore, there is an overlap between the surveyed parcels and BNSF parcels.
AOC = area of concern.
BNSF = Burlington Northern Santa Fe Railway.
Environmental covenant parcel = North Cascade Ford Property.
NAVD 88 = North American Vertical Datum of 1988.

0 30
Feet

Data Sources

Aerial photograph obtained from Microsoft Bing; parcel data obtained from Skagit County; excavation extents surveyed by Pacific Geomatic Services, Inc. in March 2020; environmental covenant parcel boundaries surveyed by Wilson Engineering, LLC.

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Path: X:\0747.01\114\Pro\M0747_01_014_004.aprx\Fig 4 Groundwater Exceedances December 2023
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Figure 4
Groundwater Exceedances December 2023

North Cascade Ford Property
Sedro-Woolley, WA

MW09R	
DRO	150
ORO	250 U
Heavy Oils	275

MW01R2	
DRO	350
ORO	250 U
Heavy Oils	495

MW07	
DRO	190
ORO	250 U
Heavy Oils	315

MW10R		
DRO	290	290
ORO	250 U	250 U
Heavy Oils	415	415

MW02R	
DRO	1,300
ORO	250 U
Heavy Oils	1,425

MW04	
DRO	230
ORO	250 U
Heavy Oils	355

P37350
P37538
P77452
P109239
P77451
P77412
P77411
MW01R2
MW09R
MW07
MW11
MW06
MW12
MW10R
MW02R
MW04
W Ferry St
Ferry St
Rita St
bing

Legend

- Monitoring Well
- Diesel and Heavy Oils Exceedance
- Estimated Extent of Petroleum Impacts in Groundwater
- UST Interim Action (MFA, 2016)
- Former Building Footprint
- Environmental Covenant Parcel (Surveyed)
- AOC 1 Excavation
- AOC 2 Excavation
- AOC 3 Excavation
- Parcel (Skagit County GIS)
- BNSF Railway
- BNSF Railway Centerline 25-foot Setback

Notes
All features are approximate.
Analytical results are shown in ug/L.
All results were compared to the MTCA Method A DRO cleanup level of 500 ug/L.
Bolding indicates a detection.
Shading indicates a cleanup level exceedance.
The excavation areas are set back from the BNSF railroad centerline by 25 feet.
The surveyed environmental covenant parcel boundaries do not coincide with the adjacent parcel boundaries obtained from Skagit County; therefore, there is an overlap between the surveyed parcels and BNSF parcels.
AOC = area of concern.
BNSF = Burlington Northern Santa Fe Railway.
DRO = diesel-range organics.
Environmental covenant parcel = North Cascade Ford Property.
heavy oils = sum of DRO and ORO.
MTCA = Model Toxics Control Act.
ORO = oil-range organics.
U = result is not detected.
ug/L = micrograms per liter.
UST = underground storage tank.

0 30
Feet

Data Sources
Aerial photograph obtained from Microsoft Bing; parcel data obtained from Skagit County; excavation extents surveyed by Pacific Geomatic Services, Inc. in March 2020; environmental covenant parcel boundaries surveyed by Wilson Engineering, LLC.

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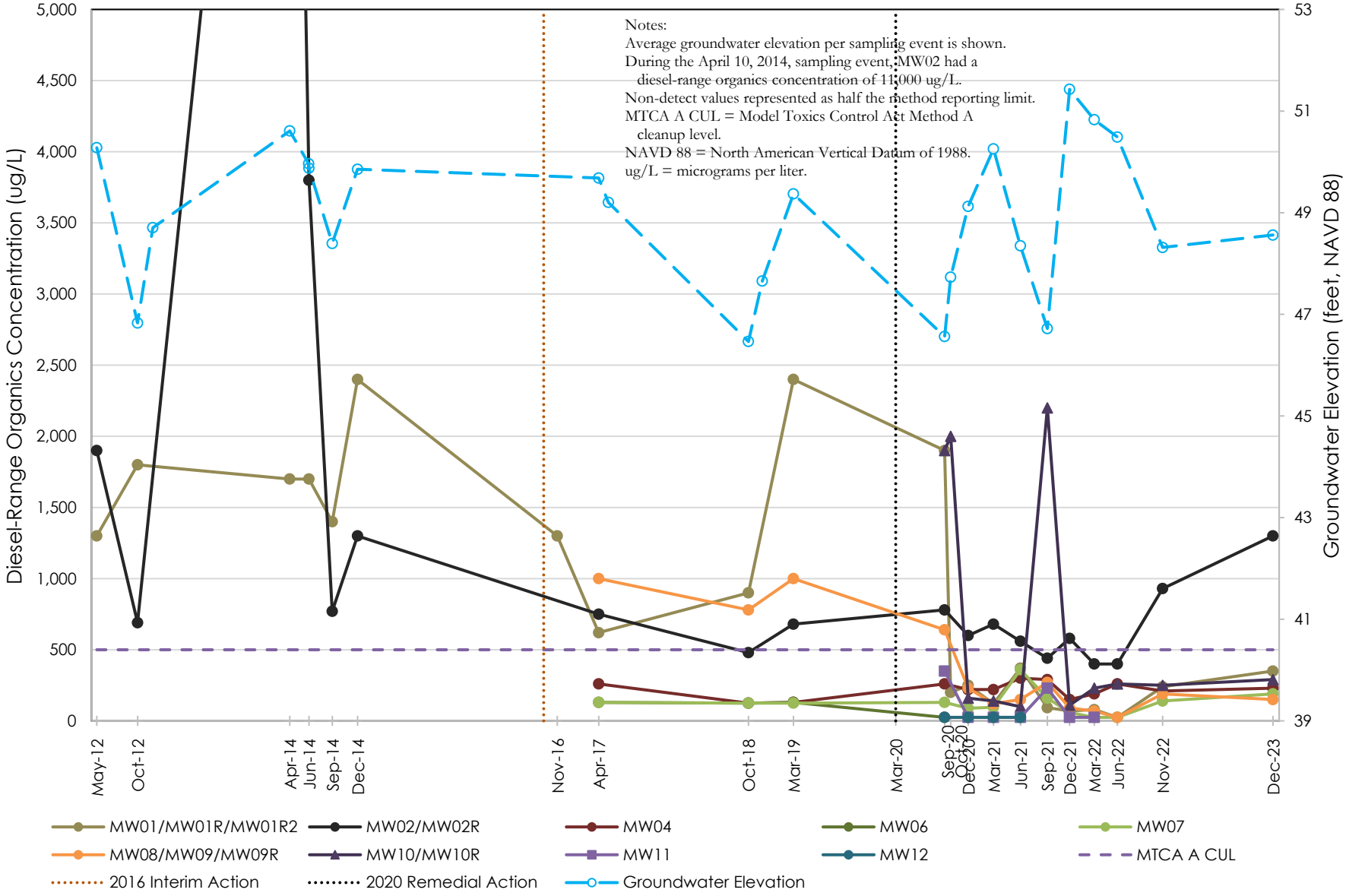
Figure 5
Diesel-Range Organics Concentrations
North Cascade Ford Property
Sedro-Woolley, Washington



M0747.01.014, 3/12/2024, DRO

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Figure 6
Lube-Oil-Range Organics Concentrations
North Cascade Ford Property
Sedro-Woolley, Washington

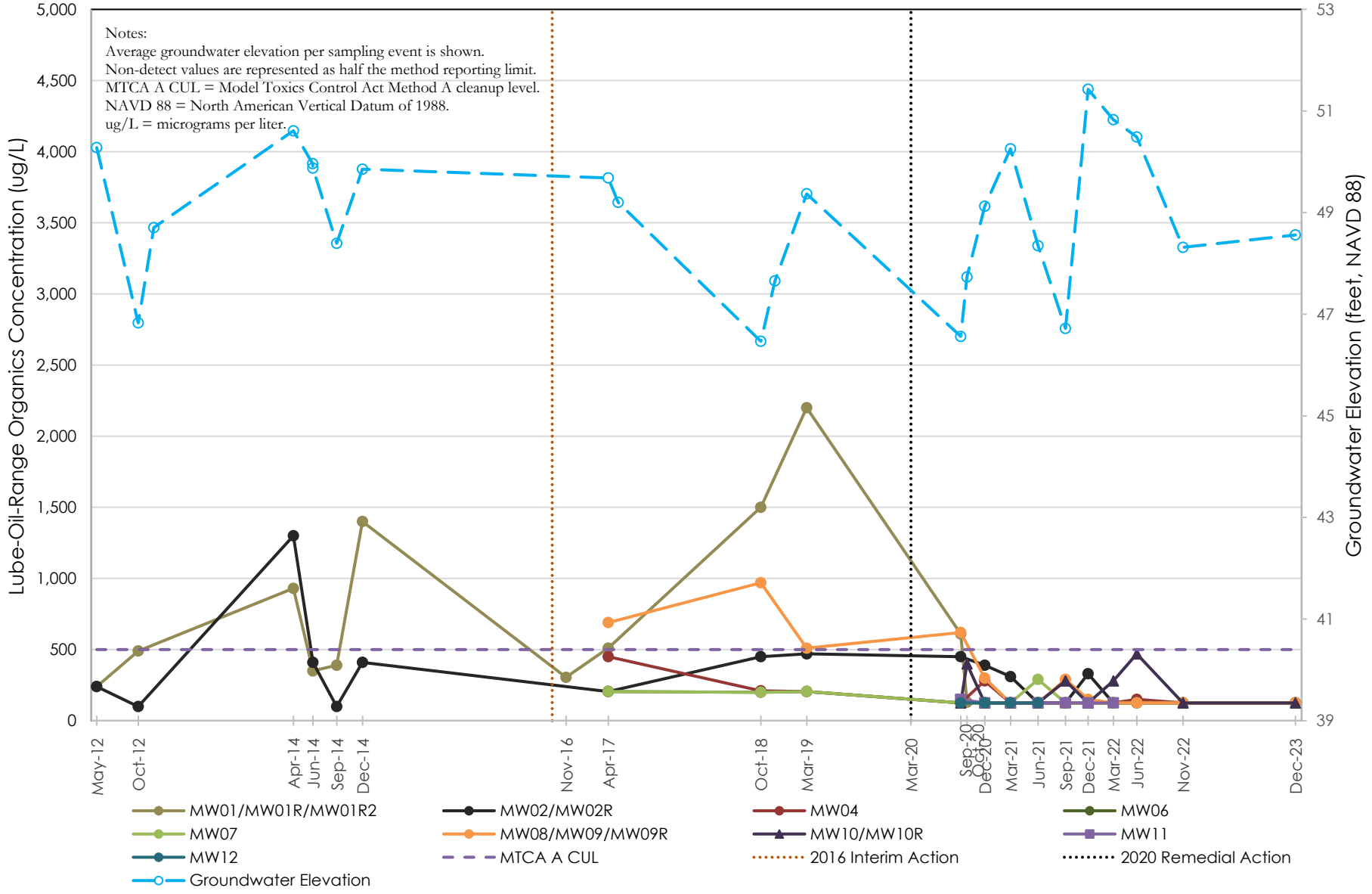

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Figure 7
Heavy Oil Concentrations
North Cascade Ford Property
Sedro-Woolley, Washington

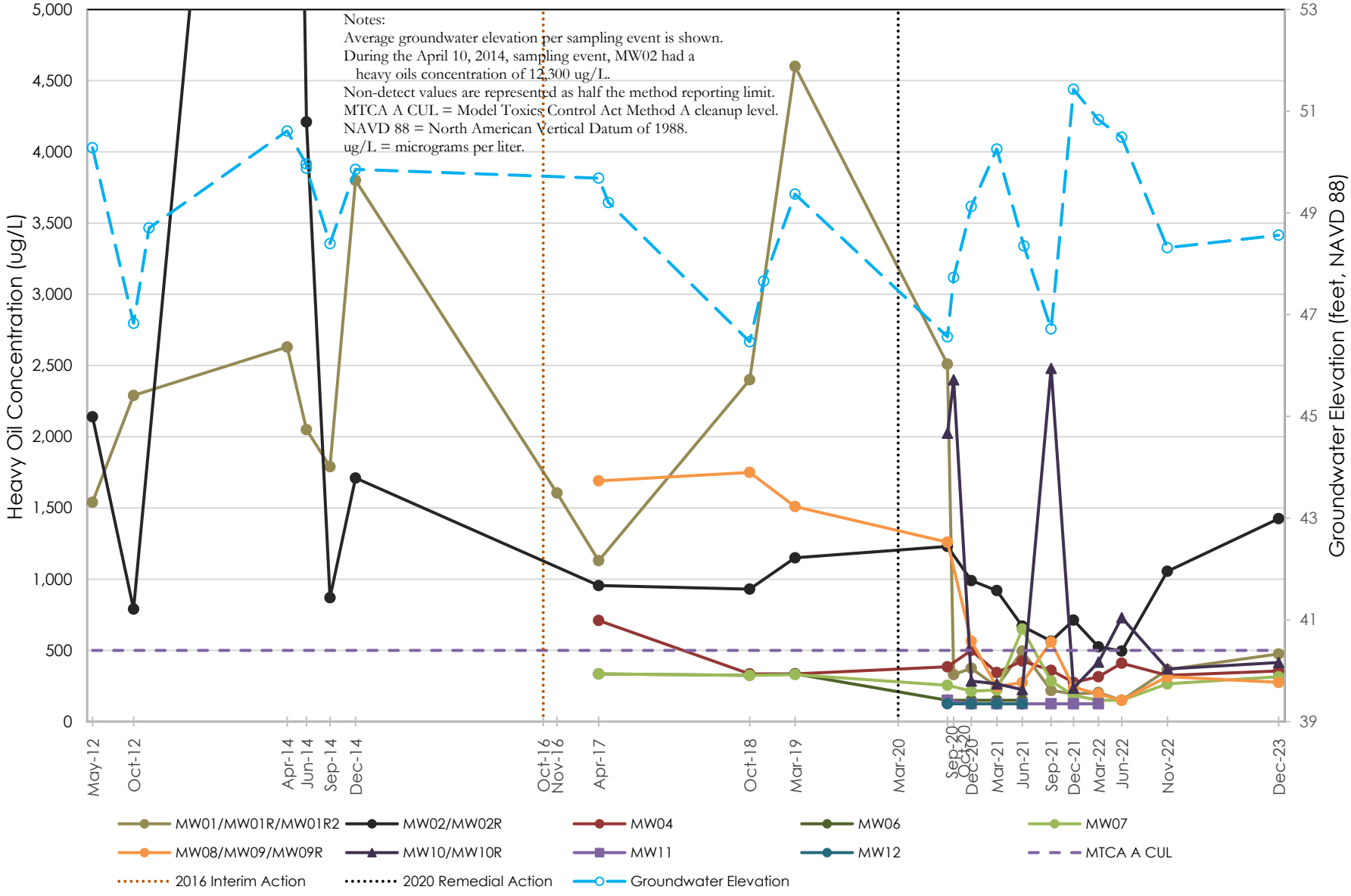

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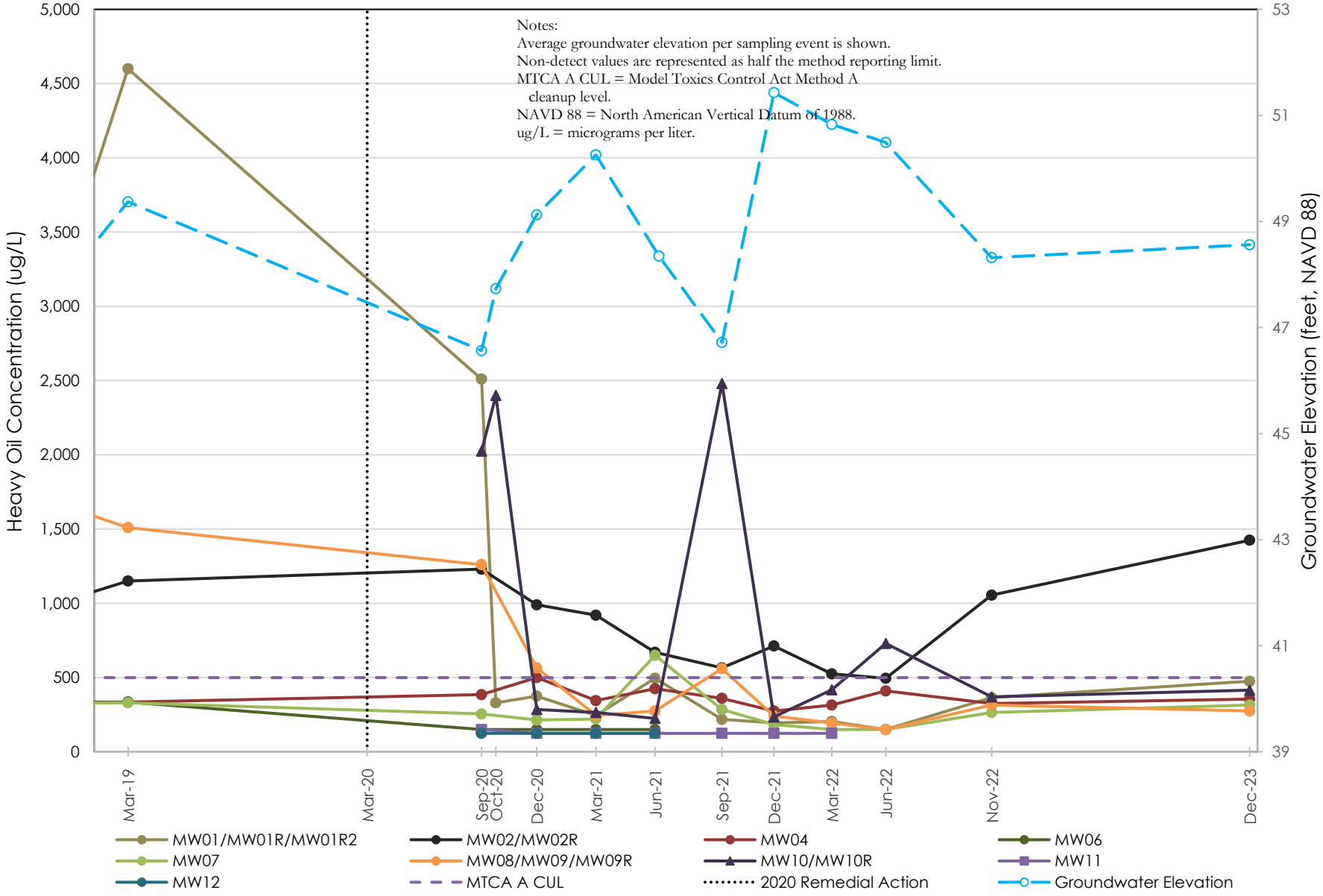
Figure 8
Heavy Oil Concentrations 2019 to 2022
North Cascade Ford Property
Sedro-Woolley, Washington



Tables

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Table 1
Historical Groundwater Analytical Results
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Sample Name	Collection Date	Collection Depth (ft bgs)[a]	Benzene	Ethylbenzene	Toluene	Xylenes[b]	Gasoline-Range Organics	Diesel-Range Organics	Lube-Oil-Range Organics	Total Naphthalenes
				MTCA Method A CUL:	5	700	1,000	1,000	800	500	500	160
1	MW01	MW1-W-8.5	05/15/2012	5.61-13.44	**0.3**	0.2 U	0.2 U	0.4 U	**400**	**1,300**	**240**	**10.53**
		FIELD DUPLICATE			**0.3**	0.2 U	0.2 U	0.4 U	**380**	**1,200**	**220**	**11.36**
		MW01-GW-20121019	10/09/2012	9.87-13.44	--	--	--	--	--	**1,800**	**490**	**11.18**
		MW01	04/10/2014	NM	0.2 U	0.2 U	0.2 U	0.4 U	250 U	**1,700**	**870**	--
		MWDUP			0.2 U	0.2 U	0.2 U	0.4 U	250 U	**1,600**	**930**	--
		MW01-GW-140618	06/18/2014	6.09-13.45	--	--	--	--	--	**1,400**	**310**	--
		FD-GW-140618			--	--	--	--	--	**1,700**	**350**	--
		MW01-GW-091014	09/10/2014	7.74-13.44	--	--	--	--	--	**1,300**	**300**	--
		FD-091014			--	--	--	--	--	**1,400**	**390**	--
		MW01-GW-121014	12/10/2014	6.08-13.46	--	--	--	--	--	**2,400**	**1,400**	--
		FD-121014			--	--	--	--	--	**1,900**	**1,200**	--
		MW01-GW-112816	11/28/2016	6.12-13.43	--	--	--	--	--	**1,300**	610 U	--
		MWDUP-GW-112816			--	--	--	--	--	**1,300**	590 U	--
		MW01-GW-042617	04/26/2017	5.35-13.40	--	--	--	--	100 U	**620**	**510 J**	--
		MWDUP-GW-042617			--	--	--	--	100 U	**560**	410 U	--
		MW01-GW-101718	10/17/2018	9.70-13.40	--	--	--	--	500 U	**900**	**1,500**	--
		MW01-GW-032819	03/28/2019	6.82-13.41	--	--	--	--	**370 J**	**2,400**	**2,200**	--
	MW05	MW05-GW-042617	04/26/2017	5.76-10.60	--	--	--	--	**490**	**1,300**	**1,100**	--
		MW05-GW-032819	03/28/2019	6.93-10.63	--	--	--	--	**600 J**	**1,500**	**460**	--
	MW07	MW07-GW-042617	04/26/2017	7.85-19.74	--	--	--	--	100 U	260 U	410 U	--
		MW07-GW-101718	10/17/2018	9.25-19.74	--	--	--	--	100 U	250 U	400 U	--
		MW07-GW-032819	03/28/2019	7.95-19.74	--	--	--	--	100 U	250 U	410 U	--
	MW08	MW08-GW-042617	04/26/2017	7.38-15.80	--	--	--	--	400 U	**1,000**	**690**	--
		MW08-GW-101718	10/17/2018	10.05-15.80	--	--	--	--	100 U	**700**	**580**	--
		MWDUP-GW-101718			--	--	--	--	500 U	**780**	**970**	--
		MW08-GW-032819	03/28/2019	6.85-15.82	--	--	--	--	100 U	**950**	**460**	--
		MWDUP-GW-032819			--	--	--	--	100 U	**1,000**	**510**	--
2	MW02 (decommissioned in September 2016)	MW2-W-9	05/16/2012	6.65-13.85	0.2 U	0.2 U	0.2 U	0.4 U	250 U	**1,900**	**240**	ND
		MW02-GW-20121019	10/09/2012	9.29-13.84	--	--	--	--	--	**690**	200 U	--
		MW02	04/10/2014	6.12-13.81	--	--	--	--	--	**11,000**	**1,300**	--
		MW02-GW-140618	06/18/2014	6.98-13.80	--	--	--	--	--	**3,800**	**410**	--
		MW02-GW-091014	09/10/2014	8.37-13.84	--	--	--	--	--	**770**	200 U	--
		MW02-GW-121014	12/10/2014	7.11-13.85	--	--	--	--	--	**1,300**	**410**	--
	MW02R (replacement well for MW02)	MW02R-GW-042617	04/26/2017	6.60-14.80	--	--	--	--	--	**750**	410 U	--
		MW02R-GW-101718	10/17/2018	9.90-14.80	--	--	--	--	--	**480**	**450**	--
		MW02R-GW-032819	03/28/2019	7.60-14.79	--	--	--	--	--	**680**	**470**	--

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VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Sample Name	Collection Date	Collection Depth (ft bgs)[a]	Benzene	Ethylbenzene	Toluene	Xylenes[b]	Gasoline-Range Organics	Diesel-Range Organics	Lube-Oil-Range Organics	Total Naphthalenes
MTCA Method A CUL:					5	700	1,000	1,000	800	500	500	160
2	MW04	MW04-GW-042617	04/26/2017	6.39-13.60	--	--	--	--	--	**260**	**450**	--
		MW04-GW-101718	10/17/2018	10.23-13.60	--	--	--	--	--	250 U	420 U	--
		MW04-GW-032819	03/28/2019	7.40-13.58	--	--	--	--	--	260 U	410 U	--
	MW06	MW06-GW-042617	04/26/2017	7.66-19.74	--	--	--	--	--	260 U	410 U	--
		MW06-GW-101718	10/17/2018	10.6-19.74	--	--	--	--	100 U	250 U	400 U	--
		MW06-GW-032819	03/28/2019	5.73-13.88	--	--	--	--	100 U	260 U	410 U	--
3	GP51	GP51-W-11.0	11/16/2016	8.85-12.0	**15 J**	**480 J**	**6.1 J**	**1000 J**	**7,400 J**	--	--	--
	GP76	GP76-W-10.0	04/25/2017	6.0-15.0	**5.8**	**230**	10 U	**8.4**	**6,900**	**2,800 J**	420 U	**428**

Notes

Analytical results are shown in micrograms per liter (parts per billion).

Bolding indicates a detection.

Shading indicates a MTCA Method A CUL exceedance; non-detect results ("U") were not compared with screening criteria.

-- = not analyzed.

AOC = area of concern.

CUL = cleanup level.

ft bgs = feet below ground surface.

J = result is estimated.

MTCA = Model Toxics Control Act.

MW = monitoring well.

ND = not detected.

NM = water level not measured because of unanticipated presence of free product.

U = analyte not detected at or above method reporting limit.

[a]Sample collection depths are from top of water table or top of screened interval, whichever is deeper, to bottom of screened interval.

[b]Total xylenes are sum of m,p-xylene and o-xylene. When both results are non-detect, the higher reporting limit is used.

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs)[a]	Groundwater Elevation (feet, NAVD 88)
MW01 (decommissioned in February 2020)	56.09	05/15/2012	--	5.61	NA	50.48
		10/09/2012	--	9.87	NA	46.22
		12/03/2012	--	6.96	NA	49.13
		04/10/2014	NM[b]	NM[b]	NA	NM[b]
		06/17/2014	NM[c]	6.01	NA	50.16
		06/18/2014	--	6.09	NA	50.00
		09/10/2014	NM[c]	7.74	NA	48.43
		12/10/2014	0.01[d]	6.09	6.08	50.09
		04/26/2017	--	5.35	NA	50.74
		05/31/2017	--	5.96	NA	50.13
		10/17/2018	0.02	9.70	9.69	46.40
		12/06/2018	NM[e]	NA[e]	NA[e]	NA[e]
		03/28/2019	NM[e]	NA[e]	NA[e]	NA[e]
MW01R (decomissioned in September 2023)	56.32	09/22/2020	--	9.94	NA	46.38
		10/14/2020	--	7.82	NA	48.50
		12/16/2020	--	5.84	NA	50.48
		03/17/2021	--	5.39	NA	50.93
		06/22/2021	--	7.27	NA	49.05
		09/27/2021	--	7.79	NA	48.53
		12/16/2021	--	4.19	NA	52.13
		03/15/2022	--	4.92	NA	51.40
		06/06/2022	--	5.20	NA	51.12
		11/16/2022	--	6.53	NA	49.79
MW01R2	56.66	12/18/2023	--	6.51	NA	50.15

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs)[a]	Groundwater Elevation (feet, NAVD 88)
MW02 (decommissioned in September 2016)	56.73	05/15/2012	--	6.65	NA	50.08
		10/09/2012	--	9.29	NA	47.44
		12/03/2012	--	8.45	NA	48.28
		04/10/2014	--	6.12	NA	50.61
		06/17/2014	--	6.96	NA	49.77
		06/18/2014	--	6.98	NA	49.75
		09/10/2014	--	8.37	NA	48.36
		12/10/2014	--	7.11	NA	49.62
MW02R	56.59	04/26/2017	--	6.60	NA	49.99
		05/31/2017	--	7.07	NA	49.52
		10/17/2018	--	9.90	NA	46.69
		12/06/2018	--	8.80	NA	47.79
		03/28/2019	--	7.60	NA	48.99
		09/22/2020	--	9.28	NA	47.31
		10/14/2020	--	9.41	NA	47.18
		12/16/2020	--	7.79	NA	48.80
		03/17/2021	--	6.23	NA	50.36
		06/22/2021	--	8.12	NA	48.47
		09/27/2021	--	10.04	NA	46.55
		12/16/2021	--	5.31	NA	51.28
		03/15/2022	--	5.88	NA	50.71
		06/06/2022	--	6.24	NA	50.35
		11/16/2022	--	8.74	NA	47.85
		12/18/2023	--	8.57	NA	48.02

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs)[a]	Groundwater Elevation (feet, NAVD 88)
MW03	55.08	05/15/2012	--	5.40	NA	49.68
		10/09/2012	--	8.11	NA	46.97
		12/03/2012	--	5.28	NA	49.80
		04/10/2014	--	5.00	NA	50.08
		06/17/2014	--	5.66	NA	49.42
		06/18/2014	--	5.87	NA	49.21
		09/10/2014	--	6.94	NA	48.14
		12/10/2014	--	5.10	NA	49.98
		05/31/2017	--	5.75	NA	49.33
		10/17/2018	--	7.72	NA	47.36
		12/06/2018	--	5.92	NA	49.16
		03/28/2019	--	5.73	NA	49.35
MW04	56.32	04/26/2017	--	6.39	NA	49.93
		05/31/2017	--	6.88	NA	49.44
		10/17/2018	--	10.23	NA	46.09
		12/06/2018	--	8.62	NA	47.70
		03/28/2019	--	7.40	NA	48.92
		09/22/2020	--	9.06	NA	47.26
		12/16/2020	--	7.71	NA	48.61
		03/17/2021	--	6.04	NA	50.28
		06/22/2021	--	7.96	NA	48.36
		09/27/2021	--	10.31	NA	46.01
		12/16/2021	--	5.12	NA	51.20
		03/15/2022	--	5.69	NA	50.63
		06/06/2022	--	6.35	NA	49.97
		11/16/2022	--	8.65	NA	47.67
		12/18/2023	--	8.57	NA	47.75

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs)[a]	Groundwater Elevation (feet, NAVD 88)
MW05 (decommissioned in February 2020)	56.25	04/26/2017	--	5.76	NA	50.49
		05/31/2017	--	6.35	NA	49.90
		10/17/2018	--	NA[f]	NA[f]	NA[f]
		12/06/2018	--	8.05	NA	48.20
		03/28/2019	--	6.93	NA	49.32
MW06	56.58	04/26/2017	--	7.66	NA	48.92
		05/31/2017	--	8.06	NA	48.52
		10/17/2018	--	10.60	NA	45.98
		12/06/2018	--	9.10	NA	47.48
		03/28/2019	--	5.73	NA	50.85
		09/22/2020	--	10.84	NA	45.74
		12/16/2020	--	8.25	NA	48.33
		03/17/2021	--	7.11	NA	49.47
		06/22/2021	--	8.72	NA	47.86
		09/27/2021	--	10.83	NA	45.75
		12/16/2021	--	5.60	NA	50.98
		03/15/2022	--	6.12	NA	50.46
		06/06/2022	--	6.40	NA	50.18
		11/16/2022	--	8.56	NA	48.02
		12/18/2023	--	8.66	NA	47.92

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs)[a]	Groundwater Elevation (feet, NAVD 88)
MW07	56.46	04/26/2017	--	7.85	NA	48.61
		05/31/2017	--	8.02	NA	48.44
		10/17/2018	--	9.25	NA	47.21
		12/06/2018	--	9.15	NA	47.31
		03/28/2019	--	7.95	NA	48.51
	NA[g]	09/22/2020	--	10.42[g]	NA[g]	NA[g]
	56.30	12/16/2020	--	8.24	NA	48.06
		03/17/2021	--	6.92	NA	49.38
		06/22/2021	--	8.80	NA	47.50
		09/27/2021	--	10.21	NA	46.09
		12/16/2021	--	5.17	NA	51.13
		03/05/2022	--	4.51	NA	51.79
		06/06/2022	--	5.13	NA	51.17
		11/16/2022	--	8.25	NA	48.05
		12/18/2023	--	8.62	NA	47.68
MW08 (decommissioned in February 2020)	56.48	04/26/2017	--	7.38	NA	49.10
		05/31/2017	--	8.01	NA	48.47
		10/17/2018	--	10.05	NA	46.43
		12/06/2018	--	9.02	NA	47.46
		03/28/2019	--	6.85	NA	49.63

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs)[(a)]	Groundwater Elevation (feet, NAVD 88)
MW09 (decomissioned in September 2023)	56.66	09/22/2020	--	9.26	NA	47.40
		10/14/2020	--	8.46	NA	48.20
		12/16/2020	--	6.17	NA	50.49
		03/17/2021	--	5.70	NA	50.96
		06/22/2021	--	7.57	NA	49.09
		09/27/2021	--	8.74	NA	47.92
		12/16/2021	--	4.51	NA	52.15
		03/15/2022	--	5.23	NA	51.43
		06/06/2022	--	5.53	NA	51.13
		11/16/2022	--	6.88	NA	49.78
MW09R	56.60	12/18/2023	--	6.47	NA	50.13
MW10 (decomissioned in September 2023)	56.26	09/22/2020	--	9.71	NA	46.55
		10/14/2020	--	9.21	NA	47.05
		12/16/2020	--	7.13	NA	49.13
		03/17/2021	--	5.80	NA	50.46
		06/22/2021	--	7.62	NA	48.64
		09/27/2021	--	9.42	NA	46.84
		12/16/2021	--	4.78	NA	51.48
		03/15/2022	--	5.44	NA	50.82
		06/06/2022	--	5.99	NA	50.27
		11/16/2022	--	8.01	NA	48.25
MW10R	55.75	12/18/2023	--	7.21	NA	48.54

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Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	NAPL Thickness (feet)	Depth to Water (feet bgs)	NAPL-Corrected Depth to Water (feet bgs)[a]	Groundwater Elevation (feet, NAVD 88)
MW11	56.2	09/22/2020	--	10.48	NA	45.72
		12/16/2020	--	6.51	NA	49.69
		03/17/2021	--	5.46	NA	50.74
		06/22/2021	--	7.72	NA	48.48
		09/27/2021	--	9.21	NA	46.99
		12/16/2021	--	4.28	NA	51.92
		03/15/2022	--	5.03	NA	51.17
		06/06/2022	--	5.45	NA	50.75
		11/16/2022	--	7.67	NA	48.53
		12/18/2023	--	7.26	NA	48.94
MW12	56.39	09/22/2020	--	10.24	NA	46.15
		12/16/2020	--	7.85	NA	48.54
		03/17/2021	--	6.67	NA	49.72
		06/22/2021	--	8.69	NA	47.70
		09/27/2021	--	10.59	NA	45.80
		12/16/2021	--	5.79	NA	50.60
		03/15/2022	--	6.33	NA	50.06
		06/06/2022	--	6.93	NA	49.46
		11/16/2022	--	9.03	NA	47.36
		12/18/2023	--	8.47	NA	47.92

Table 2
Water Levels
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Notes

-- = NAPL not observed.

bgs = below ground surface.

MP = measuring point.

MW = monitoring well.

NA = not applicable.

NAPL = nonaqueous-phase liquid.

NAVD 88 = North American Vertical Datum of 1988.

NM = not measured.

[a]Water level corrected for presence of NAPL, using assumed product density of 0.8 grams per cubic centimeter.

[b]NAPL was observed, but interface probe was not available to measure NAPL thickness and water level.

[c]NAPL was observed on probe and tubing, but measurable and extractable quantity was not present.

[d]NAPL thickness was measured, but extractable quantity was not present.

[e]NAPL was present, coating entire probe tip and tubing; coated probe tip prevented measurement of thickness or water level.

[f]Water level may not be representative of groundwater elevation because screened interval was above low water table.

[g]Well monument was compressed during implementation of remedial action, and casing had to be cut down to properly secure monument. Water level measurement not collected. New well monument installed on 10/01/2020.

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Collection Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	ORO	Heavy Oils[a]	1,4-Dichloro-benzene	Total Naphth.[b]
		Units:	ug/L									
		MTCA Method A CUL:[1]	5	700	1,000	1,000	1,000[c]	500	500	500	NV	160
1	MW01R	09/22/2020	1 U	1 U	1 U	**3.7**	**160**	**1,900**	**610**	**2,510**	--	--
		10/14/2020	20 U	20 U	20 U	60 U	100 U	**200**	260 U	**330**	--	20 U
		12/16/2020	1 U	1 U	1 U	3 U	100 U	**250**	250 U	**375**	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	**120**	250 U	**245**	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	**370**	250 U	**495**	--	--
		09/27/2021	--	--	--	--	--	**93**	250 U	**218**	--	--
		12/16/2021	--	--	--	--	--	**70**	250 U	**195**	--	--
		03/15/2022	--	--	--	--	--	**79**	250 U	**204**	--	--
		06/06/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
		11/16/2022	--	--	--	--	--	**240**	250 U	**365**	--	--
	MW01R2	12/18/2023	--	--	--	--	--	**350**	250 U	**475**	--	--
	MW07	09/22/2020	1 U	1 U	1 U	3 U	100 U	**130**	250 U	**255**	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	**89**	250 U	**214**	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	**96**	250 U	**221**	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	**360**	**290**	**650**	--	--
		09/27/2021	--	--	--	--	--	**160**	250 U	**285**	--	--
		12/16/2021	--	--	--	--	--	**59**	250 U	**184**	--	--
		03/15/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
		06/06/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
		11/16/2022	--	--	--	--	--	**140**	250 U	**265**	--	--
		12/18/2023	--	--	--	--	--	**190**	250 U	**315**	--	--

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Collection Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	ORO	Heavy Oils[a]	1,4-Dichloro-benzene	Total Naphth.[b]
		Units:	ug/L									
		MTCA Method A CUL:[1]	5	700	1,000	1,000	1,000[c]	500	500	500	NV	160
1	MW09	09/22/2020	1 U	1 U	1 U	3 U	100 U	**640**	**620**	**1,260**	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	**230**	**300**	**530**	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	**210**	**390**	**600**	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	**120**	250 U	**245**	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	**150**	250 U	**275**	--	--
		09/27/2021	--	--	--	--	--	**270**	**290**	**560**	--	--
		12/16/2021	--	--	--	--	--	**91**	300 U	**241**	1 U	--
		03/15/2022	--	--	--	--	--	**69**	250 U	**194**	--	--
		06/06/2022	--	--	--	--	--	50 U	250 U	250 U	--	--
		11/16/2022	--	--	--	--	--	**190**	250 U	**315**	--	--
	MW09R	12/18/2023	--	--	--	--	--	**150**	250 U	**275**	--	--
2	MW02R	09/22/2020	1 U	1 U	1 U	3 U	100 U	**780**	**450**	**1,230**	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	**600**	**390**	**990**	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	**680**	**310**	**990**	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	**580**	**270**	**850**	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	**560**	250 U	**685**	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	**530**	250 U	**655**	--	--
		09/27/2021	--	--	--	--	--	**440**	250 U	**565**	--	--
		12/16/2021	--	--	--	--	--	**580**	**330**	**910**	--	--
		12/16/2021	--	--	--	--	--	**390**	250 U	**515**	--	--
		03/15/2022	--	--	--	--	--	**400**	250 U	**525**	--	--
		06/06/2022	--	--	--	--	--	**340**	250 U	**465**	--	--
		06/06/2022	--	--	--	--	--	**400**	250 U	**525**	--	--
		11/16/2022	--	--	--	--	--	**930**	250 U	**1,055**	--	--
		12/18/2023	--	--	--	--	--	**1,300**	250 U	**1,425**	--	--

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Collection Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	ORO	Heavy Oils[a]	1,4-Dichloro-benzene	Total Naphth.[b]
		Units:	ug/L									
		MTCA Method A CUL:[1]	5	700	1,000	1,000	1,000[c]	500	500	500	NV	160
2	MW04	09/22/2020	1 U	1 U	1 U	3 U	100 U	**260**	250 U	**385**	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	**220**	**280**	**500**	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	**220**	250 U	**345**	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	**300**	250 U	**425**	--	--
		09/27/2021	--	--	--	--	--	**290**	250 U	**415**	--	--
		09/27/2021	--	--	--	--	--	**180**	250 U	**305**	--	--
		12/16/2021	--	--	--	--	--	**150**	250 U	**275**	--	--
		03/15/2022	--	--	--	--	--	**190**	250 U	**315**	--	--
		06/06/2022	--	--	--	--	--	**260**	300 U	**410**	--	--
		11/16/2022	--	--	--	--	--	**210**	250 U	**335**	--	--
		12/18/2023	--	--	--	--	--	**230**	250 U	**355**	--	--
	MW06	09/22/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
	MW10	09/22/2020	1 U	1 U	1 U	3 U	**370**	**1,900**	250 U	**2,025**	--	--
		10/14/2020	20 U	20 U	20 U	60 U	**550**	**2,000**	**400**	**2,400**	--	**65.1**
		12/16/2020	1 U	1 U	1 U	3 U	100 U	**160**	250 U	**285**	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	**140**	250 U	**265**	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	**100**	250 U	**225**	--	--
		09/27/2021	--	--	--	--	--	**2,200**	**280**	**2,480**	--	--
		12/16/2021	--	--	--	--	--	**110**	250 U	**235**	--	0.4 U
		03/15/2022	--	--	--	--	--	**200**	250 U	**325**	--	--
		03/15/2022	--	--	--	--	--	**230**	**280**	**510**	--	--
		06/06/2022	--	--	--	--	--	**260**	**470**	**730**	--	--
		11/16/2022	--	--	--	--	--	**240**	250 U	**365**	--	--
		11/16/2022	--	--	--	--	--	**250**	250 U	**375**	--	--
	MW10R	12/18/2023	--	--	--	--	--	**290**	250 U	**415**	--	--
		12/18/2023	--	--	--	--	--	**290**	250 U	**415**	--	--

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

AOC	Location	Collection Date	Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	ORO	Heavy Oils[a]	1,4-Dichloro-benzene	Total Naphth.[b]
		Units:	ug/L									
		MTCA Method A CUL:[1]	5	700	1,000	1,000	1,000[c]	500	500	500	NV	160
2	MW12	09/22/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		12/16/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		03/17/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
		06/22/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	--
3	MW11	09/22/2020	1 U	**30**	1 U	**16**	**390**	**350**	300 U	**500**	--	**18.8**
		09/22/2020	1 U	**30**	1 U	**17**	**380**	**200**	250 U	**325**	--	**21.7**
		12/16/2020	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	0.4 U
		03/17/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	0.4 U
		06/22/2021	1 U	1 U	1 U	3 U	100 U	50 U	250 U	250 U	--	0.4 U
		09/27/2021	--	--	--	--	--	**230**	250 U	**355**	--	--
		12/16/2021	--	--	--	--	--	50 U	250 U	250 U	--	--
		03/16/2022	--	--	--	--	--	50 U	250 U	250 U	--	--

Table 3
Groundwater Analytical Results—Compliance Monitoring
VSF Properties, LLC, North Cascade Ford Property
Sedro-Woolley, Washington

Notes

Detected values are shown in bold font.

Shading indicates a MTCA Method A CUL exceedance; non-detect results (U) were not compared with screening criteria.

-- = not analyzed.

AOC = area of concern.

CUL = cleanup level.

DRO = diesel-range organics.

GRO = gasoline-range organics.

MTCA = Model Toxics Control Act.

Naphth. = naphthalenes.

NV = no value.

ORO = lube-oil-range organics.

U = result is non-detect at the method reporting limit.

ug/L = micrograms per liter (parts per billion).

[a]Heavy oils are the sum of DRO and ORO. When results are non-detect, half the reporting limit is used. When all results are non-detect, the highest reporting limit is shown.

[b]Total naphthalenes are the sum of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. Where 1- and 2-methylnaphthalene are not analyzed, total naphthalene is represented by the naphthalene result. When all results are non-detect, the highest reporting limit is shown.

[c]MTCA Method A CUL with no detectable benzene.

Reference

[1]Washington State Department of Ecology. 2021. *Cleanup Levels and Risk Calculation (CLARC) table* . Washington State Department of Ecology - Toxics Cleanup Program. July.

Attachment A

Water FSDS

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Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW01R2		
Project #	M0747.01.014	**Sampler**	B. Murphy		
Project Name	North Cascade Ford	**Sampling Date**	12/18/2023		
Sampling Event	December 2023	**Sample Name**	MW01R2-GW-121823		
Sub Area	AOC 1	**Sample Depth (ft)**	10.5		
FSDS QA:	I. Garcia 1/29/2024	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/18/2023	10:48	14.85		6.51		8.34	1.4

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate (l/min)**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**	**Water Level**
(2) Peristaltic Pump	12:21:00 PM	2.2	0.23	7.23	9.4	568.1	0.93	196.4	0.47	6.53
	12:24:00 PM	2.4	0.23	7.36	9.5	547.8	0.8	189.7	0.46	6.53
	12:27:00 PM	2.6	0.23	7.45	9.4	513.5	0.88	182.2	0.37	6.53
	12:30:00 PM	2.7	0.23	7.48	9.5	502.6	0.87	177.8	0.27	6.53
Final Parameters	12:33:00 PM	2.9	0.23	7.5	9.5	497.5	0.8	173.3	0.34	6.53

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	12:35:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments Began purging at 11:42.

Signature _____

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Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW02R		
Project #	M0747.01.014	**Sampler**	B. Murphy		
Project Name	North Cascade Ford	**Sampling Date**	12/18/2023		
Sampling Event	December 2023	**Sample Name**	MW02R-GW-121823		
Sub Area	AOC 2	**Sample Depth (ft)**	11.5		
FSDS QA:	I. Garcia 1/29/2024	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/18/2023	11:22	14.81		8.57		6.24	1

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate (l/min)**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**	**Water Level**
(2) Peristaltic Pump	2:51:00 PM	2.4	0.24	6.93	13.5	670	0.39	20.8	4.13	8.76
	2:54:00 PM	2.6	0.24	6.93	13.5	670	0.38	18.1	3.17	8.76
Final Parameters	2:57:00 PM	2.8	0.24	6.93	13.4	671	0.36	14.1	3.43	8.76

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	3:00:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Began purging at 14:13.

Signature _____

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Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW04		
Project #	M0747.01.014	**Sampler**	B. Murphy		
Project Name	North Cascade Ford	**Sampling Date**	12/18/2023		
Sampling Event	December 2023	**Sample Name**	MW04-GW-121823		
Sub Area	AOC 2	**Sample Depth (ft)**	11		
FSDS QA:	I. Garcia 1/29/2024	**Easting**		**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/18/2023	11:26	13.55		8.57		4.98	0.8

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate (l/min)**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**	**Water Level**
(2) Peristaltic Pump	3:21:00 PM	2	0.24	6.8	14.7	619	4.03	98.9	0.86	8.83
	3:24:00 PM	2.2	0.24	6.79	14.9	617.2	3.94	104	1.09	8.83
	3:27:00 PM	2.4	0.24	6.79	14.9	621	4.07	108.2	1.11	8.83
Final Parameters	3:30:00 PM	2.6	0.24	6.79	14.9	618.8	4.03	112.1	0.83	8.83

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	3:35:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments Began purging at 14:49.

Signature _____

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Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW07		
Project #	M0747.01.014	**Sampler**	B. Murphy		
Project Name	North Cascade Ford	**Sampling Date**	12/18/2023		
Sampling Event	December 2023	**Sample Name**	MW07-GW-121823		
Sub Area	AOC 1	**Sample Depth (ft)**	14		
FSDS QA:	I. Garcia 1/29/2024	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/18/2023	10:59	19.59		8.62		10.97	1.8

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate (l/min)**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**	**Water Level**
(2) Peristaltic Pump	1:39:00 PM	2.5	0.21	6.62	13.8	277.4	1.18	60.2	11.4	9.07
	1:42:00 PM	2.7	0.21	6.62	13.8	280.8	1.07	59.9	11.1	9.09
	1:45:00 PM	2.9	0.21	6.62	13.8	282.5	1.07	60.3	11.2	9.09
Final Parameters	1:48:00 PM	3.1	0.21	6.62	13.7	284.3	1.05	60.9	11	9.08

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Cloudy, then clear; orangish-brown tint, then colorless; no odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	1:50:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments

Began purging at 12:53.

Signature _____

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Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW09R		
Project #	M0747.01.014	**Sampler**	B. Murphy		
Project Name	North Cascade Ford	**Sampling Date**	12/18/2023		
Sampling Event	December 2023	**Sample Name**	MW09R-GW-121823		
Sub Area	AOC 1	**Sample Depth (ft)**	13		
FSDS QA:	I. Garcia 1/29/2024	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/18/2023	10:54	19.73		6.47		13.26	2.2

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate (l/min)**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**	**Water Level**
(2) Peristaltic Pump	1:04:00 PM	2.8	0.2	7.46	10.1	634.4	0.84	155	0.33	6.48
	1:07:00 PM	2.9	0.2	7.46	10.1	634.5	0.8	152.3	0.23	6.48
Final Parameters	1:10:00 PM	3.1	0.2	7.45	10.1	636.8	0.77	149.5	0.21	6.48

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations: Clear; colorless; no odor; no sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	1:15:00 PM	VOA-Glass		
			Amber Glass	1	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	1	

General Sampling Comments Began purging at 12:10.

Signature _____

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Water Field Sampling Data Sheet

Client Name	VSF Properties, LLC	**Sample Location**	MW10R		
Project #	M0747.01.014	**Sampler**	B. Murphy		
Project Name	North Cascade Ford	**Sampling Date**	12/18/2023		
Sampling Event	December 2023	**Sample Name**	MW10R-GW-121823		
Sub Area	AOC 2	**Sample Depth (ft)**	13.5		
FSDS QA:	I. Garcia 1/29/2024	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
12/18/2023	11:16	19.71		7.21		12.5	2

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate (l/min)**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**ORP**	**Turbidity**	**Water Level**
(2) Peristaltic Pump	2:17:00 PM	2.9	0.28	6.89	10.4	539.3	3.75	93.1	0.99	7.23
	2:20:00 PM	3.1	0.28	6.9	10.4	540	3.74	95.2	0.46	7.23
Final Parameters	2:23:00 PM	3.3	0.28	6.9	10.4	541	3.7	97.6	0.52	7.23

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Clear; colorless; slight petroleum hydrocarbon-like odor; moderate sheen.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	2:25:00 PM	VOA-Glass		
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	2	

General Sampling Comments

Began purging at 13:34.
Duplicate sample MWDUP-GW-121823 collected here.

Signature _____

Attachment B

Analytical Lab Report

MAUL
FOSTER
ALONGI

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

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www.friedmanandbruya.com

December 27, 2023

Carolyn Wise, Project Manager
Maul Foster Alongi
1329 N State St, Suite 301
Bellingham, WA 98225

Dear Ms Wise:

Included are the results from the testing of material submitted on December 20, 2023 from the North Cascade Ford M0747.01.014, F&BI 312388 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
MFA1227R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 20, 2023 by Friedman & Bruya, Inc. from the Maul Foster Alongi North Cascade Ford M0747.01.014, F&BI 312388 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Maul Foster Alongi
312388 -01	MW01R2-GW-121823
312388 -02	MW09R-GW-121823
312388 -03	MW07-GW-121823
312388 -04	MW10R-GW-121823
312388 -05	MWDUP-GW-121823
312388 -06	MW02R-GW-121823
312388 -07	MW04-GW-121823

All quality control requirements were acceptable.

Date of Report: 12/27/23
Date Received: 12/20/23
Project: North Cascade Ford M0747.01.014, F&BI 312388
Date Extracted: 12/21/23
Date Analyzed: 12/21/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW01R2-GW-121823 312388-01	350 x	<250	100
MW09R-GW-121823 312388-02	150 x	<250	104
MW07-GW-121823 312388-03	190 x	<250	107
MW10R-GW-121823 312388-04	290 x	<250	109
MWDUP-GW-121823 312388-05	290 x	<250	98
MW02R-GW-121823 312388-06	1,300 x	<250	108
MW04-GW-121823 312388-07	230 x	<250	114
Method Blank 03-2942 MB	<50	<250	109

Date of Report: 12/27/23
Date Received: 12/20/23
Project: North Cascade Ford M0747.01.014, F&BI 312388

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	92	76	65-151	19

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

312388

SAMPLE CHAIN OF CUSTODY

12/20/23 I3

Report To Carolyn Wise
Company Maul Foster Alongi
Address 1329 N State St, Suite 301
City, State, ZIP Bellingham, WA 98225
Phone 360-690-5982 Email cwise@maulfoster.com

SAMPLERS (*signature*) Brenden Murphy
PROJECT NAME: North Cascade Food
PO #: M0747.01.014
REMARKS: Project specific RLs? - Yes / No
INVOICE TO: Carolyn Wise

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: GRO+DRO NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
MW01R2-GW-121823	01	12/18/23	12:35	WATER	1	X											
MW09R-GW-121823	02	12/18/23	13:15		1	X											
MW07-GW-121823	03	12/18/23	13:50		1	X											
MW10R-GW-121823	04	12/18/23	14:25		1	X											Label AP 12/20 MW01R-GW-121823
MWDUP-GW-121823	05	12/18/23	14:25		1	X											
MW02R-GW-121823	06	12/18/23	15:00		1	X											
MW04-GW-121823	07	12/18/23	15:35		1	X											
									Samples received at 0 °C								

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Brenden Murphy	Brenden Murphy	MFA	12/18/23	17:00
Received by:	ANH PHAN	FSS	12/20/23	13:30
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Attachment C

Data Validation Memorandum

MAUL
FOSTER
ALONGI

Data Quality Assurance/Quality Control Review

Project No. M0747.01.014 | January 8, 2024 | VSF Properties, LLC

Maul Foster & Alongi, Inc. (MFA), conducted an independent Stage 2A review of the quality of analytical results for groundwater samples and an associated quality control sample collected on December 18, 2023, at the North Cascade Ford site at 116 W Ferry Street, Sedro-Woolley, Washington.

Friedman & Bruya, Inc (F&B), performed the analyses. MFA reviewed F&B report number 312388. The analyses performed and the samples analyzed are listed in the following tables.

Analysis	Reference
Diesel- and motor-oil-range hydrocarbons	NWTPH-Dx

Note
NWTPH = Northwest Total Petroleum Hydrocarbons.

Samples Analyzed
Report 312388
MW01R2-GW-121823
MW09R-GW-121823
MW07-GW-121823
MW10R-GW-121823
MWDUP-GW-121823
MW02R-GW-121823
MW04-GW-121823

Data Qualification

Analytical results were evaluated according to appropriate laboratory- and method-specific guidelines (F&B 2022, EPA 1986).

Data validation procedures were modified, as appropriate, to accommodate quality control requirements for methods that EPA data review procedures do not specifically address (e.g., Northwest Total Petroleum Hydrocarbons [NWTPH]-Dx).

Based on the results of the data quality review procedures described below, the data, with the appropriate final data qualifiers assigned, are considered acceptable for their intended use. Final data qualifiers represent qualifiers originating from the laboratory and accepted by the reviewer, and data qualifiers assigned by the reviewer during validation.

Final data qualifiers:

- U = result is non-detect at the method reporting limit (MRL).

According to report 312388, F&B flagged all detected NWTPH-Dx diesel-range hydrocarbons results for having chromatographic patterns that did not resemble the fuel standards used for quantitation. These results were reported as diesel-range hydrocarbons instead of specific fuel products; thus, qualification was not required.

Sample Conditions

Sample Custody

Sample custody was appropriately documented on the chain-of-custody form accompanying the report. The reviewer confirmed that the gap in custody was due to shipment via a third-party shipping company.

Holding Times

Extractions and analyses were performed within the recommended holding times.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

Reporting Limits

The laboratory evaluated results to MRLs.

Blanks

Method Blanks

Laboratory method blanks are used to assess whether laboratory contamination was introduced during sample preparation and analysis. Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the laboratory method blanks were associated with all samples prepared in the analytical batch.

All laboratory method blank results were non-detect to MRLs.

Equipment Rinsate Blanks

Equipment rinsate blanks are used to evaluate field equipment decontamination. These blanks were not required for this sampling event, as all samples were collected using dedicated, single-use equipment.

Trip Blanks

Trip blanks are used to evaluate whether volatile organic compound contamination was introduced during sample storage and during shipment between the sampling location and the laboratory.

Trip blank samples were not required for this sampling event because samples were not analyzed for volatile organic compounds.

Laboratory Control Sample and Laboratory Control Sample Duplicate Results

A laboratory control sample (LCS) and a laboratory control sample duplicate (LCSD) are spiked with target analytes to provide information about laboratory precision and accuracy. The LCS and the LCSD were prepared and analyzed at the required frequency.

All LCS and LCSD results were within acceptance limits for percent recovery and relative percent difference (RPD).

Laboratory Duplicate Results

Laboratory duplicate results are used to evaluate laboratory precision. All laboratory duplicate samples were prepared and analyzed at the required frequency.

F&B did not report laboratory duplicate results for method NWTPH-Dx. Laboratory precision was evaluated using LCS and LCSD RPD results.

Matrix Spike and Matrix Spike Duplicate Results

Matrix spike (MS) and matrix spike duplicate (MSD) results are used to evaluate laboratory precision, accuracy, and the effect of the sample matrix on sample preparation and analysis.

F&B did not report MS or MSD results for NWTPH-Dx, in accordance with the method.

Surrogate Recovery Results

The samples were spiked with surrogate compounds to evaluate laboratory performance for individual samples for organic analyses.

All surrogate results were within percent recovery acceptance limits.

Field Duplicate Results

Field duplicate samples measure both field and laboratory precision. The following field duplicate and parent sample pair was submitted for analysis:

Report	Parent Sample	Field Duplicate Sample
312388	MW10R-GW-121823	MWDUP-GW-121823

MFA uses acceptance criteria of 100 percent RPD for results that are less than five times the MRL or 50 percent RPD for results that are greater than five times the MRL. RPD was not evaluated when both results in the sample pair were non-detect.

All field duplicate results met the RPD acceptance criteria.

Data Package

The data package was reviewed for transcription errors, omissions, and anomalies. None were found.

References

EPA. 1986. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* EPA publication SW-846. 3rd ed. U.S. Environmental Protection Agency. Final updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), V (2015), VI phase I (2017), VI phase II (2018), VI phase III (2019), VII phase I (2019), and VII phase II (2020).

F&B. 2022. Quality Assurance Manual. Rev. 18. Friedman & Bruya, Inc.: Seattle, WA. December 9.