



GROUND WATER MONITORING REPORT:

FIRST QUARTER 2024



CHS Property

33685 Highway 99E
Tangent, Oregon

Agency Information

ODEQ ECSI File Number 5470

Prepared for:

CHS Inc.

763 Willoughby Lane
Stevensville, Montana 59870

Issued on:

April 4, 2024

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This

Ground Water Monitoring Report: First Quarter 2024

Report for:

CHS Property

33685 Highway 99E
Tangent, Oregon

Has been prepared for the sole benefit and use of our Client:

CHS Inc.

763 Willoughby Lane
Stevensville, Montana 59870

and its assignees

Issued April 4, 2024 by:

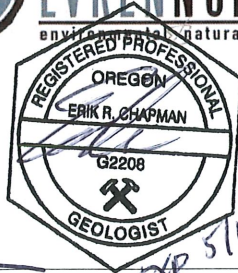


EVREN NORTHWEST INC.
environmental natural resource consultants



EXP. 2/1/2025

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List of Acronyms and Abbreviations

bgs	below ground surface
BTOC	below top of casing
CHS	Cenex Harvest States
Client	CHS Inc.
COPC	constituent of potential concern
DCP	1,2-dichloropropane
DHC	<i>Dehalococcoides</i>
DHG	<i>Dehalogenimonas spp.</i>
DO	dissolved oxygen
DOT	Department of Transportation
DSB	<i>Desulfitobacterium spp.</i>
DWBU	deep water-bearing unit
ENW	EVREN Northwest, Inc.
EPA	US Environmental Protection Agency
FSDS	Field Sampling Data Sheets
IWBU _{UM}	intermediate water-bearing unit – upper-middle portion
IWBU _L	intermediate water-bearing unit – lower portion
µg/L	micrograms per Liter
mg/L	milligrams per liter
µS/cm	microSiemens per centimeter
lpm	liters per minute
mV	millivolts
MI	Microbial Insights
NTUs	nephelometric turbidity units
ODEQ	Oregon Department of Environmental Quality
ORP	oxygen-reduction potential
QA/QC	Quality Assurance / Quality Control
PE	polyethylene
RBDM	ODEQ's <i>Risk-Based Decision Making for the Remediation of Contaminated Sites</i> guidance document
RBCs	risk-based concentrations
SOW	scope of work
SWBU	shallow water-bearing unit
TCP	1,2,3-trichloropropane
TOC	top of casing
VOA	volatile organic analysis
VOCs	volatile organic constituents

1.0 Introduction

On behalf of CHS Inc. (Client), EVREN Northwest, Inc. (ENW) prepared this report documenting First Quarter 2024 ground water monitoring at the subject site (*CHS Property*, 33685 Highway 99E, Tangent, Oregon; see Figures 1 and 2). Ongoing investigations are being completed under the oversight of the Oregon Department of Environmental Quality (ODEQ) to better understand the occurrence of 1,2-dichloropropane (DCP) and 1,2,3-trichloropropane (TCP) in ground water beneath and downgradient of the subject site.

This report documents the results of quarterly monitoring of on-site ground water monitoring wells during the First quarter of 2024 according to ODEQ-approved Work Plans.^{1,2}

2.0 Scope of Work

ENW completed the following Scope of Work (SOW) for this project:

- Measured stabilized static water levels in on-site ground water monitoring wells relative to the top of casing (TOC) at each well.
- Used water level measurements and surveyed TOC elevations to calculate potentiometric surface maps and estimate ground water flow directions.
- Collected ground water samples from 15 on-site ground water monitoring wells (MW12-I_{UM}, MW12-I_L, MW13-I_{UM}, MW14-I_{UM}, MW15-I_{UM}, MW16-I_{UM}, MW16-I_L, MW17-I_{UM}, MW17-D, MW18-I_{UM}, MW18-I_L, MW19-I_{UM}, MW19-D, MW20-I_{UM}, MW21-I_{UM}).
- Submitted ground water samples under chain-of-custody protocols to an independent analytical laboratory for volatile organic constituents (VOCs) analysis of DCP and TCP according to accepted environmental protocols.
- Picked up and transported investigation-derived waste to an appropriate disposal facility.
- Evaluated analytical data with respect to applicable generic ODEQ risk-based concentrations (RBCs).
- Prepared this report documenting methods and presenting the findings.

3.0 Site Setting

Description and Location. The site is located at 33685 Highway 99E, Tangent, Oregon, in the southern Willamette Valley (Figure 1). The site is currently owned by Porters Fuel; however, it was historically

¹ ENW, February 13, 2017. *Work Plan: Monitoring Well Installation Intermediate Ground Water Bearing Unit*, CHS Property, 33685 Highway 99E, Tangent, Oregon, ESCI File No: 5470.

² ENW, December 10, 2018. *Work Plan: Monitoring Well Installation Deep Ground Water Bearing Unit*, CHS Property, 33685 Highway 99E, Tangent, Oregon, ESCI File No: 5470.

operated under a variety of names, including Wilco Farmers, Wilco Cooperative, Full Circle Inc., Cenex LTD, Cenex Harvest States (CHS), and Tangent Retail and Cardlock Station. CHS retains responsibility for environmental monitoring at the subject site. Highway 99E bounds the west side of the property. The Wilco cardlock facility and Old Highway 34 bound the south side of the remaining portion of the CHS property. The site is located in a commercial-industrial district that surrounds Highway 99E and extends along Old Highway 34. The CHS site is bounded on its east side by the Union Pacific railroad tracks.

The site is developed with a grocery/fast food outlet, retail gas station, agricultural supply retail outlet (with fertilizer plant), other commercial utility structures, above-ground storage tanks associated with the Liquid Fertilizer Plant, and exterior paved areas. A railroad spur bounds the east side of the former Dry Fertilizer Plant. General site features are presented on the Site Map included as Figure 2.

A 127-foot-deep water well located in the central northern portion of the site currently provides water for the site; analytical data for the water well indicates it has not been impacted by any of the contaminants of potential concern (COPCs) at the site. The water well produces water from a depth of 106 feet below ground surface (bgs) to the approximate bottom of the well, a depth consistent with the deep water-bearing unit (DWBu).

Topography. The site is located at an elevation of approximately 243 feet above mean sea level, and its surface topography is generally level, according to the US Geological Survey Tangent 7.5-minute Quadrangle map (Figure 1). Regionally, surface topography slopes very gently northwest to north in the general direction of the Calapooia River drainage, located 1.6 miles from the site.

Regional Geology and Hydrogeology. Geologic mapping of this portion of the Willamette Valley shows the site is located on sedimentary deposits identified by Frank (1974)³ as Older Alluvium, by Gannett and Caldwell (1998)⁴ as the Willamette Silt unit and by O'Connor and Others (2001)⁵ as the main body of fine-grained Missoula Flood deposits. These deposits were emplaced by late Pleistocene catastrophic floods (Missoula Floods) that were impounded within the Willamette Basin. The surface deposits are very fine grained and dominated by silt composed primarily of quartz, feldspar, ferromagnesian minerals, and mica, with varying amounts of clay and fine sand. Silty, sandy gravels underlie these fine-grained sediments.

The regional hydrogeology is described in a U.S. Geological Survey Professional Paper 1424.⁶ The depth to the bedrock basement under the Tangent area is greater than 140 feet. Hydrogeologic units above the bedrock basement of the valley are identified as Willamette Aquifer and the Willamette Confining Unit.

The Willamette Aquifer is Pliocene to Holocene in age. The unit is composed of coarse-grained sediments that, in its lower portion, originated as alluvial fans deposited by rivers discharging into the Willamette Basin from the Cascade Mountain range. Specifically, in the Tangent area, the Willamette Aquifer is

³Frank, F.J., 1974. Ground Water in the Corvallis-Albany Area, central Willamette Valley, Oregon: US Geological Survey, Water-Supply Paper 2032, 48 p., 1:62,500.

⁴Gannett, M.W., and Caldwell, R.R., 1998. Geologic framework of the Willamette Lowland Aquifer System, Oregon, and Washington: US Geological Survey, Professional Paper 1424-A, 32 p., maps (1:250,000).

⁵O'Connor, J.E. and Others, 2001, Quaternary Geologic Units in Willamette Valley, Oregon: U.S. Geological Survey Professional Paper 1620, 1:250,000.

⁶Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998. Hydrogeologic framework of the Willamette Lowland Aquifer System, Oregon, and Washington: U.S. Geological Survey, Professional Paper 1424-B, 822 p., maps (1:250,000).

considered a part of the Lebanon Fan, deposited by the South Santiam River. In its upper portion, the Willamette Aquifer includes Holocene alluvium of modern streams. The Willamette Aquifer is widely used for agricultural, municipal, industrial, and rural residential water. Generally, ground water within this unit discharges to the Willamette River and its tributary streams. Properly constructed wells in the unit can produce upwards of 100 gallons per minute where the unit is sufficiently thick and where its sediment components are sufficiently coarse.

The Willamette Confining Unit consists primarily of fine-grained, distal alluvial fan materials in its lower part and low-gradient stream deposits in its upper part. Its upper part includes the Willamette Silt. The unit is widespread and is locally interbedded within the Willamette Aquifer.

Recharge to the top portion of the Willamette Aquifer derives from direct infiltration of precipitation, storm water infiltration in dry wells and ditches, and ground water contribution from upland areas surrounding the Willamette Valley. Additionally, streams originating in the Cascade and Coast Ranges and in isolated highlands within the Valley recharge the regional ground water aquifer as they discharge into the basin fill materials.

Site Geology and Hydrogeology. This is a complex site supported by a large volume of investigative information and data. Consequently, readers are advised to reference previously prepared reports, which provide a comprehensive understanding of the site's geologic/hydrogeologic setting. The following summary is focused to support an understanding of ground water beneath the subject site.

The following generalized hydrostratigraphic units have been identified:

- **Fill Material.** Fill materials are present in many areas of the site and generally consist of loose, dry sand and gravel.
- **Shallow Water-Bearing Unit (SWBU).** Occurring from the static water level to 17 feet below ground surface (bgs), the SWBU is present below the fill materials within very fine-grained brown clayey silt to silt.
- **Semi-Impermeable Unit / Fragipan.** From approximately 17 to 23 feet bgs is very dense, very hard, fragipan, consisting of gravelly to pebbly silty sand and silty sandy gravel with some clay. This fragipan appeared to be semi-consolidated, with low moisture content (unsaturated) at the times it was drilled. Observations during drilling have indicated the upper surface of the fragipan layer slopes slightly westward as indicated by its depths at borings B38 (approximately 14 feet bgs) versus its depth encountered at B48 (approximately 18 feet bgs).
- **Intermediate Water-Bearing Unit (IWBU).** Occurring from approximately 23 to 80 feet bgs, with the following sub-units:
 - **IWBU_{UM}.** The Upper-Middle (_{UM}) portion, occurring from approximately 23 to 45 feet bgs, is a sandy gravel to silty sandy gravel unit, which constitutes the upper portion of the regional Willamette Aquifer. The gravels range from pebbles to approximately three (3)-inch diameter. These materials are saturated and, based on observations during purging of monitoring wells, have relatively good permeability and recharge.
 - **Dense Clayey/Silty Gravel Lens.** This lower-permeability lens (as compared to the rest of the IWBU) occurs from approximately 45 to 65 feet bgs.

- **IWBU_L**. The Lower (L) portion of the IWBU, occurring from approximately 65 to 80 feet bgs, is similar in constitution to the Upper-Middle portion.
- **Blue-Gray Aquitard**. Starting at depths ranging from approximately 80 to 112 feet bgs and extending to depths up to 120 feet bgs, the blue-gray aquitard consists of clay described as stiff and slightly moist to dry.
- **Deep Water-Bearing Unit (DWBU)**. Occurring below the blue-gray aquitard, consisting of saturated medium to coarse dark gray to black sand and gravel.

Hydrostratigraphic Profile A – A.’ Profile A-A’ in Appendix A correlates ENW’s interpretation of the on-site hydrostratigraphy with off-site hydrostratigraphy obtained from driller’s water supply well logs. The line of section is shown on Figure 2. The regional aquifer systems and their provenance described by Woodward and Others (1998)⁶ below is the basis of our interpretation.

The aquifers described in the Tangent area include the uppermost Willamette Silt Aquifer, deposited by catastrophic flood deposits and measuring an estimated thickness of between 10 and 20 feet, and the underlying Willamette Aquifer estimated at between 140 and 120 feet in thickness.⁶ ENW believes the Willamette Silt Aquifer and underlying Willamette Aquifer correlate respectively with the SWBU and both the upper-middle and lower portions of IWBU at the site. The Willamette Aquifer directly overlies the Willamette Confining Unit, which was mapped at approximately 200 feet bgs beneath Tangent.

The Willamette Aquifer includes the Lebanon fan deposits derived from the Santiam River to the east. These deposits of sands and gravels extend from the Cascade Range westward across the Willamette Lowland to the Willamette River. The Willamette Aquifer therefore exhibits lateral facies changes, primarily a result of lower energy fluvial and lacustrine depositional environments as one progresses westward from the Cascades toward the subject site, Calapooia River, and the Willamette River. Cross-sections provided by Woodward and Others (1998),⁶ show a general thinning of the Willamette Aquifer to the west, with thicknesses beneath Tangent of about 140 feet thick and tapering to about 20 feet near the Calapooia River and is absent (0 feet in thickness) near the Willamette River.

Lateral variation (facies changes) in stratigraphy of the fan deposits is reflected in well logs in the area. Most notably, the laterally discontinuous cemented clayey/silty gravel confining unit in the IWBU, which measures about 20 feet thick beneath the subject site, tapers to about 10 feet thick at the Harmony Acres well (LINN 57296), and further thins to about 3 feet thick at the Blain Well (LINN 8787). Further north, the Sargeant Well (LINN 8786) describes what may be a confining layer, describing a brown clay and some gravel and black clay from 38 to 49 feet bgs; however, no confining units are described in the Berdahl Well (LINN 52057) within the depth range of the IWBU.

ENW concludes that the IWBU_{UM} and IWBU_L subunit designations beneath the site may not apply as one proceeds further west of the site. The implication is that rather than two water bearing units separated by a cemented clayey/silty gravel confining unit, the IWBU becomes a single water bearing unit consisting of stratified clays, sands and gravels lacking the distinct cemented clayey/silty gravel layer. The Sargeant, Blain, Minshall, and Ayers wells mapped along A-A’ are completed at between 48’ and 84’ bgs and appear to correlate with the IWBU.

The Harmony Acres Well (LINN 57296) and Rolland Drive LLC Well (LINN 58194), and recently deepened wells on the L&M Industrial Fabrication Property (LINN 63619, LINN 63613, and LINN 63612) are the only

five wells within a ½ mile radius down gradient of the site penetrating the DWBU. What is interpreted to be the Willamette Confining Unit (“blue clay aquitard”) is logged in these offsite wells at approximately 74 to 116 feet bgs.

4.0 Ground Water Monitoring Wells

Previous investigations^{7,8,9,10,11,12,13,14} have led to the systematic expansion of the ground water monitoring wells at the subject site to provide DCP and TCP ground water characterization data for the SWBU, IWBU and DWBU. Seven ground water monitoring wells are installed in the SWBU as part of an underground storage tank release of petroleum hydrocarbons at the card lock facility; however, sampling of SWBU wells is no longer being conducted after results showed no TCP/DCP impacts.

Two monitoring wells previously installed by others in the SWBU are located at the north adjoining property and are identified as MWi (indoor well) and MWo (outdoor well). DCP and TCP were not detected in these wells during the First quarter 2020 monitoring event, further supporting the conclusion that the SWBU is not impacted by TCP/DCP. Monitoring wells MWi and MWo were not sampled during this current ground water monitoring event.

Thirteen wells are installed in the IWBU, and two wells are installed in the DWBU. Table 4-1 summarizes completion information of monitoring wells completed in the IWBU and DWBU. Figures 2 and 3 may be referenced for ground water monitoring well locations.

⁷ ENW, August 27, 2008. *CHS, Inc. (LUST File #22-95-4158) Assessment of Ground-Water Impacts*, Rolland Drive Study Area (ECSI File #4602), addressed to Seth Sadofsky from Neil Woller and Lynn Green.

⁸ ENW, November 13, 2012. *1,2-Dichloropropane Assessment*, CHS Property, 33685 Highway 99E, Tangent, Oregon: Prepared for CHS, Inc., ENW Project #160-02001-12.

⁹ ENW, March 16, 2014. *Subsurface Investigation*, CHS, Inc., Property, 33685 Highway 99E, Tangent, Oregon: Prepared for CHS, Inc., ENW Project #160-02001-12.

¹⁰ ENW, June 8, 2016. *Additional Subsurface Investigation (TCP/DCP Impact Area)*, CHS, Inc. Property, 33685 Highway 99E, Tangent, Oregon: Prepared for CHS, Inc., ENW Project #160-02001-12.

¹¹ ENW, October 25, 2017. *Monitoring Well Installation Report Intermediate Water Ground Water Bearing Unit*, CHS, Inc. Property, 33685 Highway 99E, Tangent, Oregon: Prepared for CHS, Inc., ENW Project #160-02001-17.

¹² ENW, June 2017 through March 2021. *Ground Water Monitoring Report* (15 quarterly reports), CHS, Inc. Property, 33685 Highway 99E, Tangent, Oregon: Prepared for CHS, Inc., ENW Project #160-02001-08.

¹³ ENW, June 2019. *Monitoring Well Installation Report Deep Ground Water-Bearing Unit*, CHS, Inc. Property, 33685 Highway 99E, Tangent, Oregon: Prepared for CHS, Inc., ENW Project #160-02001-20.

¹⁴ ENW, July 2020. *Monitoring Well Installation Report: Intermediate Ground Water-Bearing Unit (MW20-IUM and MW 21-IUM)*, CHS, Inc. Property, 33685 Highway 99E, Tangent, Oregon; Prepared for CHS, Inc., ENW Project #160-02001-23.

Table 4-1. Well Construction Details – On-Site Monitoring Wells

Monitoring Well Identification	Date Installed	Start Card No.	OWRD Well Tag ID	Total Depth Drilled (feet bgs)	Slot Size (inches)	Slotted PVC Screen Interval (feet bgs)
Intermediate Water-Bearing Unit (Upper Sub-unit)						
MW12-I _{UM}	5/8/2017	1034335	L122493	45	0.01	35-45
MW13-I _{UM}	5/5/2017	1034333	L122492	45	0.01	35-45
MW14-I _{UM}	5/5/2017	1034331	L122491	45	0.01	35-45
MW15-I _{UM}	5/4/2017	1034329	L122490	45	0.01	35-45
MW16-I _{UM}	5/2/2017	1034325	L122488	45	0.01	35-45
MW17-I _{UM}	5/2/2017	1034334	L118641	45	0.01	35-45
MW18-I _{UM}	5/11/2017	1034332	L122487	45	0.01	35-45
MW19-I _{UM}	5/10/2017	1034328	L122400	45	0.01	35-45
MW20-I _{UM}	6/19/2020	1047736	L118489	44	0.02	28-33
MW21-I _{UM}	6/17/2020	1047735	L118488	44	0.02	25-35
Intermediate Water-Bearing Unit (Lower Sub-unit)						
MW12-I _L	5/9/2017	1034326	L122494	75	0.01	65-75
MW16-I _L	5/3/2017	1034327	L122489	75	0.01	65-75
MW18-I _L	9/16/2017	1036243	L122495	81	0.01	77-80
Deep Water-Bearing Unit						
MW17-D	3/16/2019	1042080	L132174	131	0.02	121-131
MW19-D	3/12/2019	1042079	L132173	131	0.02	121-131

5.0 Field Work Objectives

Field work performed for this project was developed with the following specific objectives:

- To sample and evaluate ground water beneath, and down gradient of the subject site from the IWBU and DWBU.
- To evaluate long-term trends in ground water parameters in monitoring wells.
- To perform the ground water monitoring in a safe manner for technical personnel.
- To perform the ground water monitoring efficiently and cost-effectively, without interfering or otherwise affecting the condition and operation of the property.
- To document information and data generated under this statement of work that is valid for the intended use.

All work was performed by employees and subcontractors trained and licensed to work with hazardous materials. Safety procedures were strictly enforced using a Health and Safety Plan.¹⁵ Ground water monitoring field data were recorded on Field Sampling Data Sheets (FSDS) for each monitoring well (included in Appendix B).

¹⁵ ENW, October 2013. *Health and Safety Plan*.

6.0 Ground Water Elevations and Flow Direction

On February 13, 2024, ENW opened the monitoring wells to allow water levels to equilibrate to ambient barometric pressure. Depth-to-water measurements were then made relative to the surveyed markings at top-of-casing for each monitoring well. Ground water elevations (presented in Table 1) were calculated by subtracting the depth-to-water measurement (measured to within 0.01 feet) from the surveyed top-of-casing elevation of each monitoring well. The water level elevations were used to generate the potentiometric contour maps for the IWBU_{UM} and IWBU_L presented on Figures 4 and 5, respectively.

Ground water monitoring results suggest that the water level elevations in both water-bearing units were higher relative to the previous quarterly sampling event in November 2024.

- Intermediate Water-Bearing Unit (upper portion, IWBU_{UM})
 - Depth to water measurements ranged from 2.50 to 6.36 feet below top of casing (BTOC) in the 10 monitoring wells screening in the IWBU_{UM} measured during this monitoring period.
 - The ground water levels still appear to be anomalously high at MW20-I_{UM} and MW21-I_{UM} in the north part of the site. Eliminating the ambiguous data from monitoring wells MW20 and MW21, the potentiometric surfaces reflect a west-northwest ground-water flow direction in the upper portion of the IWBU at a gradient of 0.004 ft/ft between MW12-I_{UM} and MW16-I_{UM}, and a shallower gradient of 0.0008 between MW16-I_{UM} and MW18-I_{UM}. This apparent ground-water flow direction is supported by plume morphology (see Section 10).
 - A turbidity of 140 nephelometric turbidity unit (NTU) (Section 7) and a drop in water level of 1.42 feet while purging at a rate of only 150 milliliters per minute (mL/min) suggest a reduction in efficiency in MW16-I_{UM}, likely related to the pilot study initiated in June 2021 in this area of the site.
- Intermediate Water-Bearing Unit (lower portion, IWBU_L)
 - Depth to water measurements ranged from 6.20 to 6.50 feet BTOC in the three monitoring wells screening in the IWBU_L during this monitoring event.
 - Potentiometric surfaces reflect a west-northwesterly flow direction in the IWBU_L with a relatively low potentiometric flow gradient averaging approximately 0.001 ft/ft between MW12-I_L and MW18-I_L.
- Deep Water Bearing Unit (DWBU)
 - The depth to water measurements were 5.52 feet and 5.54 BTOC in monitoring wells screened in the DWBU during this monitoring event.

- Vertical gradients
 - The vertical gradient in each of these wells was calculated by dividing the difference in potentiometric surface elevation by the difference in the elevations of the respective mid-points of the screened intervals, which is a method suggested by the EPA.¹⁶
 - Static water levels in monitoring well pairs MW12-I_{UM}/MW12-I_L, MW16-I_{UM}/MW16-I_L, MW17-I_{UM}/MW17-D, MW18-I_{UM}/MW18-I_L, and MW19-I_{UM}/MW19-D were higher in the I_{UM} relative to the I_L or D, which suggests a downward vertical gradient in these water-bearing units.
 - I_{UM}/I_L: 0.00301 ft/ft to 0.0171 ft/ft
 - I_{UM}/D: 0.006 ft/ft (both sets of wells)

7.0 Monitoring Well Purging

On February 13 and 14, 2024, monitoring wells were purged prior to sampling to ensure samples were collected from ground water representative of the surrounding water-bearing unit. Purging of on-site monitoring wells was performed using dedicated polyethylene (PE) tubing and a peristaltic pump set at its lowest flow rate (0.150 liters per minute [lpm]). Flow was minimized to maintain less than 0.3 feet of draw down in the well (per low-flow protocols). Drawdown was maintained at < 0.3 feet, except for wells MW12-I_{UM}, MW14-I_{UM}, MW16-I_{UM} and MW18-I_L, where a drawdown of 0.34, 0.37 feet (briefly), 1.42 feet, and 3.45 feet, respectively, was noted even with the pump at its lowest setting.

Ground water parameters were monitored to evaluate the purging process and to provide a better framework to understand the analytical data and site hydrochemistry. A Horiba U-52 and an In-Situ Aqua Troll 500 with flow-thru cells were used to collect water quality parameters during purging. Readings were recorded every 3 to 5 minutes for dissolved oxygen (DO), pH, temperature, specific conductivity, oxidation reduction potential (ORP) and turbidity. Purging was considered complete when parameters stabilized to within 10 percent. All sampling data were recorded on Field Sampling Data Sheets (FSDS) for each monitoring well (included in Appendix B).

Table 2 summarizes the ground water parameters prior to ground water sample collection to date. A review of the data shows:

- **pH** measurements were within the range of natural waters (6 to 9) in Oregon:
 - IWB_{UM}: pH readings ranged from 5.91-7.27 during this monitoring event (last 4 quarters pH ranged from 5.69 to 7.27)
 - IWB_L: pH readings ranged from 7.13 -7.52 during this monitoring event (last 4 quarters pH ranged from 6.80 to 7.52)
 - DWBU: pH readings ranged from 7.36-7.72 during this monitoring event (last 4 quarters pH ranged from 7.29 to 8.07)

¹⁶ Harden, S.L et. al., 2004. *Direction of Ground-Water Flow in the Surficial Aquifer in the Vicinity of Impact Areas G-10 and K-2, Marine Corps Base Camp Lejeune, North Carolina, 2004*: U.S. EPA Scientific Investigations Report 2004-5270

Historically, pH<6 was detected in MW13-I_{UM} (min. 5.91), MW14-I_{UM} (min. 5.14), MW15-I_{UM} (min. 5.69), MW16-I_{UM} (min. 5.25), MW17-I_{UM} (min. 5.92), MW18-I_{UM} (min. 5.93), MW19-I_{UM} (min. 5.84), and MW20-I_{UM} (min. 5.39). Dissolved COPCs detections are not exclusive to these eight wells; historically, no COPCs have been detected in MW20-I_{UM}. COPCs have been detected in one of the five remaining IWBU wells (MW12-I_{UM}), though pH readings in this well are within the range of natural waters in Oregon, i.e., pH is not less than 6. This data suggests that dissolved contaminants in ground water at the site have not significantly altered ground water pH. In general, the pH of the IWBU_{UM} is lower than the IWBU_L and the DWBU; suggesting pH increases with depth in the deeper water-bearing units.

- **Specific conductivity:**

- IWBU_{UM}: specific conductivity ranged from 207 to 3,360 microSiemens per centimeter ($\mu\text{S}/\text{cm}$) during this monitoring event, with the highest conductivities ($> 1000 \mu\text{S}/\text{cm}$) at wells MW13-I_{UM}, MW14-I_{UM}, MW15-I_{UM} and MW16-I_{UM}, which are four of the seven wells with the highest DCP concentrations and the wells most proximate to the area of the focused pilot study. Specific conductivity during the last four quarters ranged from 207 to 3,460 $\mu\text{S}/\text{cm}$.
- IWBU_L: ranged from 362 to 486 $\mu\text{S}/\text{cm}$ during this monitoring event (last 4 quarters specific conductivity ranged from 350 to 486 $\mu\text{S}/\text{cm}$).
- DWBU: ranged from 330 to 336 $\mu\text{S}/\text{cm}$ during this monitoring event (last 4 quarters specific conductivity ranged from 103 to 337 $\mu\text{S}/\text{cm}$).

Generally, specific conductivity tends to decrease with increasing depth and suggests lower dissolved mineral content with increasing depth.

- **Oxygen-reduction potential (ORP):** ORP is typically measured to determine the oxidizing or reducing potential of ground water at a monitoring well location. In terms of contaminant degradation, DCP and its daughter products are degraded through a process of reductive dechlorination, which is favored under reducing conditions (negative ORP values).
 - IWBU_{UM}: -109 to 199 millivolts (mV) during this monitoring event, suggesting oxidizing conditions in all wells but MW16-I_{UM} and MW21-I_{UM}. Of the ten IUM wells, MW16-I_{UM} has the highest occurrence since initiation of the Pilot Study in June 2021, of negative ORP at 95% (21/22) and is followed by MW18-I_{UM} at 32% (7/22), MW17-I_{UM} at 15% (3/20), MW14-I_{UM} at 14% (3/22), MW21-I_{UM} at 9% (1/11), and MW13-I_{UM} at 9% (1/11). The data suggests that pilot test injections have resulted in consistently negative ORP at MW16-I_{UM} being immediately downgradient of the injections. Pilot test injections may have triggered a greater percentage of negative ORP occurrences in downgradient well MW18-I_{UM}.
 - IWBU_L: ranged from -129 to 21 mV during this monitoring event, suggesting reducing conditions at MW18-I_L (last four quarters ORP ranged from -138 to 154 mV). The occurrence of negative ORP prior to the pilot study suggests negative ORP is likely a function of well depth rather than an effect of pilot test injections.
 - DWBU: was -116 mV in both deep wells during this monitoring event, consistent with historical monitoring data for this water-bearing unit and suggesting reducing conditions

in the deeper unit (last 4 quarters ORP ranged from -187 to -106 mV). The occurrence of negative ORP prior to the pilot study suggests negative ORP is a function of well depth than an effect of pilot test injections.

The water-bearing units become progressively more reducing with increasing depth. An ORP ≤ 100 mV suggests that reducing conditions are prevalent. Degradation of DCP and TCP through reductive dechlorination is favored under reducing conditions. ENW notes negative ORP readings, particularly in MW16-I_{UM}, following pilot injections in June 2019 of reducing agents and microbial consortia in a temporary pilot test array upgradient of MW16-I_{UM} (see Appendix D for ORP trends).

- **Dissolved oxygen (DO):** Reductive dechlorination of DCP and TCP is favored with low DO (less than approximately 0.5 mg/L, anaerobic conditions).
 - IWBU_{UM}: DO readings ranged from 0.67 to 7.33 milligrams per liter (mg/L) (last four quarters DO range from 0.42 to 7.62), with DO at MW16-I_{UM} suggestive of anaerobic conditions in 20 of 21 sampling events since initiating the Pilot Study in June 2021.
 - IWBU_L: DO readings ranged from 0.86 to 1.25 mg/L (last four quarters DO range from 0.34 to 1.40). Anaerobic conditions are suggested in over 90% of the monitoring events since initiating the Pilot Study.
 - DWBU: DO readings were 2.22 and 5.46 mg/L (last four quarters DO range from 0.22 to 5.46). Anaerobic conditions are suggested in 80 to 90% of the monitoring events since initiating the Pilot Study.

DO is generally lower (< 0.50 mg/L) immediately downgradient of the pilot test injection well (MW16-I_{UM} MW19-I_{UM}) and in the deeper hydrostratigraphic units (e.g., lower portion of the IWBU aquifer and the deeper DWBU). See Appendix D for DO trends.

- **Turbidity** measured with the Horiba water quality meter after purging just prior to sampling:
 - IWBU_{UM}: turbidity ranged from 0 to 140 NTUs.
 - IWBU_L: turbidity ranged from 1 to 52 NTUs.
 - DWBU: turbidity was 15 and 61 NTUs.

Turbidity in general was low (clear) in all samples except in wells MW13-I_{UM}, MW14-I_{UM}, MW15-I_{UM}, and MW16-I_{UM}, MW12-I_L and MW19-D where turbidity was relatively high (≥ 50 NTU). Low turbidity indicates the wells have been properly developed and thereby yield water samples representative of ground water. Turbidity in MW16-I_{UM} was relatively high during the previous nine quarters through the current quarter, which is likely related to the increase of biologic activity following the injection of nutrients near this well in June 2019.

8.0 Investigation-Derived Waste Storage and Disposal

All fluid waste generated from monitoring well sampling (purge and decontamination water) was deposited into Department of Transportation (DOT) approved 55-gallon drums which were sealed and properly labeled. The drummed wastewater was last picked up by WasteXpress on February 16, 2024, and transported to their facility in Portland, Oregon, for treatment and disposal.

9.0 Ground Water Sampling

9.1 Monitoring Well Sampling

Once ground water parameters stabilized, samples were collected from monitoring wells on February 13-14, 2024, using low-flow sampling methods. Samples were transferred slowly into laboratory-prepared volatile organic analysis (VOA) containers without turbulence and eliminating all bubbles within the container before sealing. Each sample container was labeled with the sample location, depth of sample, date, time, sampler name, and analysis required.

All non-disposable sampling tools were decontaminated between monitoring wells using a sequential wash of Alconox® solution, tap water rinse, and a final rinse in deionized water. Fresh nitrile gloves were worn by all personnel and changed out at the start of purging and sampling each well.

9.2 Analytical Plan

Following purging, samples were collected and immediately placed in cooled storage until delivered to the laboratory under chain-of-custody protocols. All analyses were performed by Friedman & Bruya, Inc. (F&BI), of Seattle, Washington, using the US Environmental Protection Agency (EPA) Methods specified in Table 10-1.

Table 10-1. Analytical Plan

Analytical Method	Constituents	Ground Water
EPA 8260D	1,2-Dichloropropane (DCP) and 1,2,3-Trichloropropane (TCP)	Onsite IWBU and DWBU Monitoring Wells

10.0 Ground Water Analytical Results

In this section, cumulative ground water monitoring results are evaluated by water-bearing unit to provide a current understanding of the TCP/DCP plume beneath the site. The laboratory analytical report, including quality control information, i.e., data validation sheets, is provided in Appendix C. Cumulative analytical results for this and previous monitoring events are summarized in Table 3, after the text.

Consistent with ODEQ's *RBDM* guidance document,¹⁷ the most stringent RBCs of the applicable exposure pathways for DCP and TCP are presented in Table 3 for initial screening purposes.

Table 10-1, below, summarizes laboratory-reported analytical results for ground water samples collected from onsite monitoring wells during this monitoring event.

Table 10-1. Summary of Ground Water Laboratory Results – On-Site Monitoring Wells

Location ID	Date Sampled	Water-Bearing Unit	TCP (µg/L)	DCP (µg/L)
Upper-Middle IWBU				
MW12-I _{UM}	2/13/24	IWBU	<1 [ND]	6.9
MW13-I _{UM}	2/13/24	IWBU	2.5	38
MW14-I _{UM}	2/14/24	IWBU	12	140
MW15-I _{UM}	2/13/24	IWBU	<1 [ND]	17
MW16-I _{UM}	2/13/24	IWBU	2.7	65
MW17-I _{UM}	2/14/24	IWBU	<1 [ND]	<1 [ND]
MW18-I _{UM}	2/14/24	IWBU	<1 [ND]	<1 [ND]
MW19-I _{UM}	2/14/24	IWBU	4.4	77
MW20-I _{UM}	2/14/24	IWBU	<1 [ND]	<1 [ND]
MW21-I _{UM}	2/13/24	IWBU	<1 [ND]	<1 [ND]
MWFD (Field Dup MW17-I _{UM})	2/13/24	IWBU	<1 [ND]	<1 [ND]
Lower IWBU				
MW12-L	2/13/24	IWBU	<1 [ND]	<1 [ND]
MW16-L	2/13/24	IWBU	<1 [ND]	<1 [ND]
MW18-L	2/14/24	IWBU	<1 [ND]	<1 [ND]
DWBU				
MW17-D	2/14/24	DWBU	<1 [ND]	<1 [ND]
MW19-D	2/14/24	DWBU	<1 [ND]	<1 [ND]
Occupational RBC (Drinking Water) (ug/L) ¹			0.0023 *	1.9

Notes:

<1 [ND] = not detected at or above laboratory method reporting limit indicated

ug/L = micrograms per Liter

Bolded concentrations exceed Occupational RBC for drinking water.

¹ Low est Applicable Risk-Based Concentration for ground water (screening level, Occupational).

* ODEQ does not provide an RBC for 1,2,3-trichloropropane. The RBC was calculated using ODEQ's RBDM spreadsheet.

10.1 DCP and TCP

Results of analysis of DCP and TCP are discussed in this section.

- **Upper Portion of the IWBU.** Data from monitoring wells completed in the IWBU_{UM} suggests that the highest DCP and TCP concentrations in wells between the Wilco Building and former Dry Fertilizer Plant (MW14-I_{UM}). The estimated DCP plume is shown on the DCP iso-concentration plot (Figure 6),

¹⁷ ODEQ, 2003. *Risk-Based Decision Making for Remediation of Contaminated Sites*. Including updates through the publish date of this report.

based on current monitoring data and prior reconnaissance ground-water data. Concentration trend plots for IWBUM wells are presented in Appendix D. During this monitoring event:

- The highest TCP and DCP concentrations were reported at monitoring well MW14-IUM (12 micrograms per Liter [$\mu\text{g/L}$] and 140 $\mu\text{g/L}$, respectively) and MW19-IUM (4.4 $\mu\text{g/L}$ and 77 $\mu\text{g/L}$, respectively).
 - Historically, a positive correlation has been apparent between DCP concentrations and ground water levels, i.e., the DCP concentration is higher when the ground water level is higher (Chart D1, Appendix D). This quarter saw an increase in ground water levels and the fifth lowest DCP concentration recorded to date at MW16-IUM. TCP and DCP decreased in MW14-IUM compared to last quarter. While there is some seasonal variability, decreasing TCP and DCP concentration trends are apparent in MW16-IUM. At MW14-IUM, a decreasing concentration trend is apparent only for DCP, while TCP appears to be neither increasing nor decreasing (i.e., is stable). Based on current concentrations in MW16-IUM, TCP shows a 79% decrease and DCP a 57% decrease compared to concentrations in May 2021 just prior to the Pilot study injections.
 - From June 2017 through June 2020, DCP concentrations in MW16-IUM were greater than DCP concentrations in MW14-IUM for 10 of the 12 quarterly monitoring events and TCP concentrations in MW16-IUM were greater than TCP concentrations in MW14-IUM for 9 of the 12 quarterly monitoring events. After the October 2020 event, DCP and TCP in MW14-IUM has been consistently greater than TCP in MW16-IUM. Thus, the trends of decreasing TCP and DCP concentrations are steeper in MW16-IUM than MW14-IUM as shown on Chart D1, Appendix D. Furthermore, the trend of decreasing TCP is steeper than DCP in MW16-IUM, possibly because DCP is an intermediate breakdown product for TCP during reductive dechlorination.
 - An increasing DO trend is observed in MW14-IUM, while MW16-IUM shows a decreasing trend (see Chart D2, Appendix D). Of the two wells, a decreasing ORP trend is observed in both wells, though MW16-IUM is dipping more steeply (see Chart D2, Appendix D). ENW concludes that decreasing DO and ORP trends in MW16-IUM are in part the result of pilot injections immediately upgradient of this well and are driving the reductive dechlorination reactions that seem to favor the decreases in TCP and DCP concentrations at MW16-IUM as compared to MW14-IUM.
- TCP was not detected and DCP was detected in up gradient monitoring well MW12-IUM at 6.9 $\mu\text{g/L}$, continuing a decreasing TCP and DCP concentrations over time (Chart D3, Appendix D).
- In cross-gradient wells MW13-IUM and MW15-IUM, TCP and DCP were respectively detected at concentrations of 2.5 and 38 $\mu\text{g/L}$ in MW13-IUM and below detection limits and 17 $\mu\text{g/L}$ in MW15-IUM. DCP appears to be increasing in MW13-IUM and MW15-IUM (Chart D4, Appendix D). TCP appears to be increasing in MW13-IUM (Chart D4, Appendix D) and stable or slightly increasing in MW15-IUM (Chart D5, Appendix D).
- Neither DCP nor TCP were detected in down-gradient well MW18-IUM. TCP and DCP were detected at 4.4 $\mu\text{g/L}$ and 77 $\mu\text{g/L}$, respectively in the furthest down-gradient monitoring well MW19-IUM, located in the west part of the site adjacent to Highway 99. DCP in MW18-IUM

decreased to below detection limits for the first time. DCP and TCP in MW19-I_{UM} increased slightly relative to the November 2023 event. Overall, a trend of decreasing DCP is apparent in MW18-I_{UM} and trends of decreasing TCP and DCP are apparent in MW19-I_{UM} (Chart D6, Appendix D).

- **Lower Portion of the IWBU.** Data from three (3) monitoring wells completed in the lower portion of the IWBU have generally not detected the presence of TCP or DCP except low concentrations and only sporadically. During this monitoring event, neither DCP nor TCP were detected in any of the three wells screened in the IWBU_L. This data suggests that the bulk of the TCP/DCP plume is in the upper portion of the IWBU.
- **DWBU.** Neither TCP nor DCP were detected in wells MW17-D and MW19-D during the November 2023 event, further supporting that the bulk of the TCP/DCP plume is in the upper portion of the IWBU.

10.2 Quality Control

A review of the laboratory report indicates all samples were analyzed within acceptable quality assurance/quality control (QA/QC) requirements and specified hold times. The laboratory results of quality control samples are presented on Table 3 and summarized below. Data validation reports are included with the analytical laboratory reports in Appendix C.

- **Trip Blanks.** Both DCP and TCP were “non-detect” in the trip blanks used on February 13-14, 2024, suggesting no cross-contamination during transport to the laboratory.
- **Blind Sample Duplicates.** Laboratory analysis of a blind sample duplicate collected from well MW17I_L (sample “MWFD-GW-240214”) reported concentrations of TCP and DCP below detection limits, compared to similar results of the sample from MW17-I_L of non-detect. The relative percent difference (RPD) for the two samples was 0% for DCP and TCP. An RPD of 20% or less is considered acceptable accuracy. Results of the quality control samples suggest that the accuracy and precision of both field and laboratory testing methods are within the data quality objectives for this project.

11.0 Discussion

The results of the most recent sampling event support the following observations and conclusions regarding the ground water plume:

- 1) The water level data from MW20-I_{UM} during this monitoring event continues to be anomalously high despite previous attempts to redevelop well MW20-I_{UM}. The potentiometric surface is 3.44 to 3.85 feet higher in the area of MW20-I_{UM} compared to the closest IUM wells (MW14-I_{UM} and MW19-I_{UM}). Ground water elevations are similar at MW20-I_{UM} and MW21-I_{UM}, though the latter is the most northwesterly IWBU_{UM} well. Removing this ambiguous ground water level data, the ground water flow in the upper portion of the intermediate water-bearing unit is west-northwesterly consistent with previous monitoring events and plume morphology.

- 2) TCP and/or DCP in the upper portion of the intermediate aquifer were detected above their screening level RBCs for ground water in monitoring wells MW12-I_{UM} through MW16-I_{UM}, and MW19-I_{UM}. Following completion of the pilot study, the highest ground water concentrations continue to be in well MW14-I_{UM} in the area between the former Dry Fertilizer Plant and the former Wilco Building. The second highest DCP concentration is down-gradient of MW14-I_{UM} at MW19-I_{UM}. The DCP concentration in MW16-I_{UM} is the third highest behind MW19-I_{UM}. The dramatic reduction in DCP (and TCP) in MW16-I_{UM} is attributed to reductive dechlorination enhanced by pilot injections of reducing agents and microbial consortia upgradient of this well. The TCP/DCP plume within the upper portion of the IWBU appears to be delineated by down- to cross-gradient well MW17-I_{UM} to the southwest, cross-gradient well MW-20_{IUM} to the north, and ENW's (2013)¹⁸ temporary reconnaissance borings B26 to the southeast, B36-B38 to the east, and B34 to the northeast (Figure 3). Neither DCP nor TCP were detected in monitoring wells screened in the lower portion of the intermediate aquifer or the deeper water-bearing unit during the current monitoring event.
- 3) Trend plots suggest the concentrations of TCP and DCP fluctuate with ground water levels. Decreasing DCP trends within the upper portion of the IWBU are suggested in source area wells (MW14-I_{UM} and MW16-I_{UM}), down gradient wells MW18-I_{UM} and MW19-I_{UM}, and upgradient well MW12-I_{UM}.

12.0 Next Steps

Based on the findings of ground water monitoring events, enhanced reductive dechlorination has been shown by the pilot test to be effective in reducing the source area TCP/DCP concentrations at a rate that exceeds natural attenuation alone. Having confirmed that injections of reducing agents and microbial consortia are an effective means of reducing TCP/DCP in ground water,¹⁹ ENW discussed these results with ODEQ who concurred that further injections of reducing agents and microbial consortia is a viable alternative to monitored long-term attenuation moving forward. This option is currently being discussed with CHS.

The next quarterly sampling event is scheduled for May 2024.

13.0 Limitations

The scope of this report is limited to observations made during on-site work; interviews with knowledgeable sources; and review of readily available published and unpublished reports and literature.

¹⁸ ENW, May 16, 2014. *Subsurface Investigation*, CHS, Inc. Property, 33685 Highway 99^E, Tangent, Oregon, ODEQ ECSI File No. 5470, Prepared for: CHS, 763 Willoughby Lane, Stevensville, Montana 59870.

¹⁹ ENW, July 26, 2023. *In-Situ Bioremediation Pilot Study Summary of Results*, CHS Property, 33685 Highway 99^E, Tangent, Oregon, Agency Information ODEQ ECSI File No. 5470, Prepared For: CHS, Inc., 763 Willoughby Lane, Stevensville, Montana 59870.

As a result, these conclusions are based on information supplied by others as well as interpretations by qualified parties.

The focus of the work does not extend to the presence of the following conditions:

1. Naturally occurring toxic or hazardous substances in the subsurface soils, geology, and water,
2. Toxicity of substances common in current habitable environments, such as stored chemicals, products, building materials and consumables,
3. Contaminants or contaminant concentrations that are not a concern now but may be under future regulatory standards,
4. Unpredictable events that may occur after ENW's site work, such as illegal dumping or accidental spillage.

There is no practice that is thorough enough to absolutely identify the presence of all hazardous substances that may be present at a given site. ENW's investigation has been focused only on the potential for contamination that was specifically identified in the Scope of Work. Therefore, if contamination other than that specifically mentioned is present and not identified as part of a limited Scope of Work, ENW's environmental investigation shall not be construed as a guaranteed absence of such materials. ENW has endeavored to collect representative analytical samples for the locations and depths indicated in this report. However, no sampling program can thoroughly identify all variations in contaminant distribution.

We have performed our services for this project in accordance with our agreement and understanding with the client. This document and the information contained herein have been prepared solely for the use of the client.

ENW performed this study under a limited scope of services per our agreement. ENW assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.

Table 1. Ground Water Elevation Data, Monitoring Wells

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet)	Monitored Depth Interval (feet)	Top of Casing (relative to datum) (feet)	Depth to Static Water Level (feet)	Relative Elevation (feet)
Upper-Middle IWBU							
MW12IUM	6/7/2017	L122493	45	35-45	245.88	7.82	238.06
	9/25/2017					15.50	230.38
	1/8/2018					5.27	240.61
	4/16/2018					4.80	241.08
	7/16/2018					13.82	232.06
	11/8/2018					15.56	230.32
	3/28/2019					5.75	240.13
	6/20/2019					10.70	235.18
	9/17/2019					15.40	230.48
	12/17/2019					13.21	232.67
	3/2/2020					5.59	240.29
	6/24/2020					8.17	237.71
	10/1/2020					16.05	229.83
	2/22/2021					4.95	240.93
	5/26/2021					9.12	236.76
	8/12/2021					16.61	229.27
	11/30/2021					10.11	235.77
	2/7/2022					5.95	239.93
	5/19/2022					5.01	240.87
	8/23/2022					12.76	233.12
	9/19/2022					15.00	230.88
	11/15/2022					9.19	236.69
	12/29/2022					6.10	239.78
	2/28/2023					5.10	240.78
	3/20/2023					5.00	240.88
	5/16/2023					6.86	239.02
	8/15/2023					16.37	229.51
	11/8/2023					11.55	234.33
	2/13/2024					5.64	240.24
MW13IUM	6/7/2017	L122492	46	35-45	245.93	8.05	237.88
	9/25/2017					15.95	229.98
	1/8/2018					5.57	240.36
	4/16/2018					5.03	240.90
	7/16/2018					14.09	231.84
	11/8/2018					15.83	230.10
	3/28/2019					5.95	239.98
	6/20/2019					10.85	235.08
	9/17/2019					15.66	230.27
	12/17/2019					13.36	232.57
	3/2/2020					5.77	240.16
	6/24/2020					8.35	237.58
	10/1/2020					16.59	229.34
	2/22/2021					5.14	240.79
	5/26/2021					9.43	236.50
	8/12/2021					16.91	229.02
	11/30/2021					10.44	235.49
	2/7/2022					5.92	240.01
	5/19/2022					5.14	240.79
	8/23/2022					12.05	233.88
	9/19/2022					15.26	230.67
	10/11/2022					16.30	229.63
	11/15/2022					9.52	236.41
	12/29/2022					5.59	240.34
	2/28/2023					5.34	240.59
	3/20/2023					5.20	240.73
	5/16/2023					7.11	238.82
	8/15/2023					16.63	229.30
	11/8/2023					11.90	234.03
	2/13/2024					6.00	239.93

Table 1. Ground Water Elevation Data, Monitoring Wells

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet)	Monitored Depth Interval (feet)	Top of Casing (relative to datum) (feet)	Depth to Static Water Level (feet)	Relative Elevation (feet)
MW14IUM	6/7/2017	L122491	45	35-45	246.66	9.20	237.46
	9/25/2017					17.08	229.58
	1/8/2018					6.59	240.07
	4/16/2018					6.15	240.51
	7/16/2018					15.18	231.48
	11/8/2018					16.85	229.81
	3/28/2019					6.95	239.71
	6/20/2019					11.79	234.87
	9/17/2019					16.69	229.97
	12/17/2019					14.72	231.94
	3/2/2020					6.78	239.88
	6/24/2020					9.38	237.28
	10/1/2020					17.62	229.04
	2/22/2021					6.15	240.51
	5/25/2021					10.50	236.16
	6/22/2021					12.24	234.42
	7/28/2021					16.80	229.86
	8/13/2021					18.02	228.64
	11/30/2021					11.45	235.21
	12/14/2021					8.61	238.05
	1/13/2022					6.69	239.97
	2/7/2022					6.97	239.69
	3/14/2022					6.10	240.56
	4/19/2022					6.45	240.21
	5/19/2022					6.20	240.46
	6/13/2022					6.91	239.75
	8/23/2022					14.01	232.65
	9/19/2022					16.27	230.39
	10/11/2022					17.35	229.31
	11/15/2022					10.45	236.21
	12/29/2022					6.51	240.15
	2/28/2023					6.35	240.31
	3/20/2023					6.23	240.43
	5/16/2023					8.20	238.46
	8/15/2023					17.78	228.88
	11/8/2023					13.19	233.47
	2/13/2024				245.31	5.60	239.71
MW15IUM	6/7/2017	L122490	45	35-45	245.56	7.97	237.59
	9/25/2017					15.87	229.69
	1/8/2018					5.50	240.06
	4/16/2018					4.98	240.58
	7/16/2018					14.09	231.47
	11/8/2018					15.81	229.75
	3/28/2019					5.85	239.71
	6/20/2019					10.81	234.75
	9/17/2019					15.60	229.96
	12/17/2019					13.39	232.17
	3/2/2020					5.72	239.84
	6/24/2020					8.27	237.29
	10/1/2020					16.53	229.03
	2/22/2021					5.01	240.55
	5/26/2021					9.40	236.16
	8/13/2021					16.95	228.61
	11/30/2021					10.39	235.17
	1/13/2022					5.44	240.12
	2/7/2022					5.82	239.74
	5/19/2022					5.08	240.48
	8/24/2022					13.32	232.24
	10/11/2022					16.30	229.26
	11/15/2022					9.49	236.07
	2/28/2023					5.38	240.18
	3/20/2023					5.01	240.55
	5/16/2023					7.00	238.56
	8/15/2023					16.60	228.96
	11/8/2023					11.97	233.59
	2/13/2024					5.86	239.70

Table 1. Ground Water Elevation Data, Monitoring Wells

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet)	Monitored Depth Interval (feet)	Top of Casing (relative to datum) (feet)	Depth to Static Water Level (feet)	Relative Elevation (feet)
MW16IUM	6/7/2017	L122488	45	35-45	245.63	8.18	237.45
	9/25/2017					16.12	229.51
	1/8/2018					5.68	239.95
	4/16/2018					5.31	240.32
	7/16/2018					14.23	231.40
	11/8/2018					15.97	229.66
	3/28/2019					6.00	239.63
	6/20/2019					10.97	234.66
	9/17/2019					15.65	229.98
	12/17/2019					13.71	231.92
	3/2/2020					5.84	239.79
	6/24/2020					8.48	237.15
	10/1/2020					16.58	229.05
	2/22/2021					5.18	240.45
	5/26/2021					9.53	236.10
	6/23/2021					11.29	234.34
	7/28/2021					15.95	229.68
	8/12/2021					17.15	228.48
	11/30/2021					12.40	233.23
	12/14/2021					9.10	236.53
	1/13/2022					7.70	237.93
	2/7/2022					9.68	235.95
	3/14/2022					7.20	238.43
	4/19/2022					5.90	239.73
	5/20/2022					5.30	240.33
	6/13/2022					6.10	239.53
	8/24/2022					13.20	232.43
	9/19/2022					15.40	230.23
	10/11/2022					19.60	226.03
	11/15/2022					9.57	236.06
	12/29/2022					6.51	239.12
	2/28/2023					5.70	239.93
	3/20/2023					5.30	240.33
	5/16/2023					7.11	238.52
	8/15/2023					16.75	228.88
	11/8/2023					12.31	233.32
	2/13/2024					6.05	239.58
MW17IUM	6/7/2017	L118641	45	35-45	244.95	7.94	237.01
	9/25/2017					16.14	228.81
	1/8/2018					5.38	239.57
	4/16/2018					4.95	240.00
	7/16/2018					14.00	230.95
	11/8/2018					15.70	229.25
	3/28/2019					5.58	239.37
	6/20/2019					10.50	234.45
	9/17/2019					15.37	229.58
	12/17/2019					13.30	231.65
	3/2/2020					5.56	239.39
	6/24/2020					8.15	236.80
	10/1/2020					16.44	228.51
	2/22/2021					4.79	240.16
	5/26/2021					9.15	235.80
	6/23/2021					10.93	234.02
	7/28/2021					15.65	229.30
	8/13/2021					16.72	228.23
	12/1/2021					10.30	234.65
	12/14/2021					7.34	237.61
	1/13/2022					5.17	239.78
	2/7/2022					6.65	238.30
	3/14/2022					4.41	240.54
	4/19/2022					5.02	239.93
	5/19/2022					4.82	240.13
	6/13/2022					5.53	239.42
	8/23/2022					12.78	232.17
	9/15/2022					9.59	235.36
	9/19/2022					15.03	229.92
	12/29/2022					5.55	239.40
	2/28/2023					5.05	239.90
	3/20/2023					4.90	240.05
	5/16/2023					6.84	238.11
	8/16/2023					16.27	228.68
	11/9/2023					11.55	233.40
	2/13/2024					5.57	239.38

Table 1. Ground Water Elevation Data, Monitoring Wells

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet)	Monitored Depth Interval (feet)	Top of Casing (relative to datum) (feet)	Depth to Static Water Level (feet)	Relative Elevation (feet)
MW18IUM	6/7/2017	L122487	45	35-45	245.82	8.75	237.07
	9/25/2017					16.79	229.03
	1/8/2018					6.36	239.46
	4/16/2018					6.10	239.72
	7/16/2018					14.8	231.02
	11/8/2018					16.4	229.42
	3/28/2019					6.45	239.37
	6/20/2019					11.26	234.56
	9/17/2019					16.13	229.69
	12/17/2019					14.00	231.82
	3/2/2020					6.36	239.46
	6/24/2020					8.94	236.88
	10/1/2020					17.12	228.70
	2/22/2021					5.61	240.21
	5/25/2021					9.97	235.85
	6/23/2021					11.70	234.12
	7/28/2021					16.36	229.46
	8/13/2021					17.45	228.37
	12/1/2021					11.05	234.77
	12/14/2021					8.05	237.77
	1/13/2022					6.00	239.82
	2/8/2022					6.49	239.33
	3/14/2022					5.64	240.18
	4/19/2022					5.93	239.89
	5/20/2022					5.74	240.08
	6/13/2022					6.40	239.42
	8/23/2022					13.51	232.31
	9/19/2022					15.84	229.98
	10/11/2022					16.85	228.97
	11/15/2022					10.25	235.57
	12/29/2022					6.10	239.72
	2/28/2023					5.89	239.93
	3/20/2023					5.75	240.07
	5/16/2023					7.65	238.17
	8/16/2023					17.08	228.74
	11/9/2023					12.29	233.53
	2/13/2024					6.36	239.46
MW19IUM	6/7/2017	L122400	45	35-45	244.1	7.15	236.95
	9/25/2017					15.11	228.99
	1/8/2018					4.61	239.49
	4/16/2018					4.22	239.88
	7/16/2018					13.21	230.89
	11/8/2018					14.84	229.26
	3/28/2019					4.76	239.34
	6/20/2019					9.56	234.54
	9/17/2019					14.5	229.60
	12/17/2019					12.57	231.53
	3/2/2020					4.68	239.42
	6/24/2020					7.32	236.78
	10/1/2020					15.48	228.62
	2/22/2021					3.96	240.14
	5/25/2021					8.36	235.74
	8/13/2021					15.84	228.26
	11/30/2021					9.45	234.65
	2/8/2022					9.89	234.21
	5/19/2022					4.02	240.08
	8/24/2022					12.13	231.97
	9/19/2022					14.10	230.00
	10/11/2022					16.20	227.90
	11/15/2022					8.45	235.65
	12/29/2022					4.65	239.45
	2/28/2023					4.19	239.91
	3/20/2023					4.12	239.98
	5/17/2023					6.00	238.10
	8/15/2023					15.72	228.38
	11/8/2023					10.95	233.15
	2/13/2024					4.80	239.30

Table 1. Ground Water Elevation Data, Monitoring Wells

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet)	Monitored Depth Interval (feet)	Top of Casing (relative to datum) (feet)	Depth to Static Water Level (feet)	Relative Elevation (feet)
MW20IUM	6/24/2020	L118489	33	28-33	248.411	7.80	240.61
	10/1/2020					15.90	232.51
	2/22/2021					4.58	243.83
	5/25/2021					8.56	239.85
	8/13/2021					16.37	232.04
	11/8/2021					12.80	235.61
	12/1/2021					9.89	238.52
	1/13/2022					4.98	243.43
	2/8/2022					5.45	242.96
	5/19/2022					4.75	243.66
	8/23/2022					12.38	236.03
	9/19/2022					14.10	234.31
	10/11/2022					15.69	232.72
	11/8/2022					9.69	238.72
	11/15/2022					8.91	239.50
	12/29/2022					5.05	243.36
	2/28/2023					4.81	243.60
	3/20/2023					4.69	243.72
	5/16/2023					6.53	241.88
	8/16/2023					16.06	232.35
	11/8/2023					11.58	236.83
	2/13/2024					5.26	243.15
MW21IUM	6/24/2020	L118488	35	25-35	244.725	4.82	239.91
	10/1/2020					11.16	233.57
	2/22/2021					2.05	242.68
	5/25/2021					5.10	239.63
	8/13/2021					12.33	232.40
	12/1/2021					6.25	238.48
	2/8/2022					2.75	241.98
	5/19/2022					2.20	242.53
	8/23/2022					8.73	236.00
	10/11/2022					11.89	232.84
	11/8/2022					5.40	239.33
	11/15/2022					5.31	239.42
	12/29/2022					2.04	242.69
	2/28/2023					2.10	242.63
	3/20/2023					2.19	242.54
	5/16/2023					3.69	241.04
	8/16/2023					12.98	231.75
	11/8/2023					7.32	237.41
	2/13/2024					2.50	242.23
	Lower IWB						
MW12IL	6/7/2017	L122494	75	65-75	246.03	8.39	237.64
	9/25/2017					16.25	229.78
	1/8/2018					5.73	240.30
	4/16/2018					5.26	240.77
	7/16/2018					14.48	231.55
	11/8/2018					16.27	229.76
	3/28/2019					5.75	240.28
	6/20/2019					11.25	234.78
	9/17/2019					16.06	229.97
	12/17/2019					13.96	232.07
	3/2/2020					6.03	240.00
	6/24/2020					8.70	237.33
	10/1/2020					16.57	229.46
	2/22/2021					5.39	240.64
	5/26/2021					9.89	236.14
	8/12/2021					17.35	228.68
	11/30/2021					10.91	235.12
	2/7/2022					6.22	239.81
	5/19/2022					5.44	240.59
	8/23/2022					13.45	232.58
	9/19/2022					15.56	230.47
	10/11/2022					16.75	229.28
	11/15/2022					9.75	236.28
	12/29/2022					6.10	239.93
	2/28/2023					5.61	240.42
	3/20/2023					5.49	240.54
	5/16/2023					7.43	238.60
	8/15/2023					17.05	228.98
	11/8/2023					12.49	233.54
	2/13/2024					6.30	239.73

Table 1. Ground Water Elevation Data, Monitoring Wells

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet)	Monitored Depth Interval (feet)	Top of Casing (relative to datum) (feet)	Depth to Static Water Level (feet)	Relative Elevation (feet)
MW16IL	6/7/2017	L122489	80	65-75	245.69	8.18	237.51
	9/25/2017					16.25	229.44
	1/8/2018					5.70	239.99
	4/16/2018					5.29	240.40
	7/16/2018					14.30	231.39
	11/8/2018					16.08	229.61
	3/28/2019					6.04	239.65
	6/20/2019					11.03	234.66
	9/17/2019					15.92	229.77
	12/17/2019					13.82	231.87
	3/2/2020					5.86	239.83
	6/24/2020					8.50	237.19
	10/1/2020					16.44	229.25
	2/22/2021					5.21	240.48
	5/26/2021					9.74	235.95
	6/23/2021					11.56	234.13
	7/28/2021					16.00	229.69
	8/12/2021					17.22	228.47
	11/30/2021					10.73	234.96
	12/14/2021					7.71	237.98
	1/13/2022					5.55	240.14
	2/7/2022					5.94	239.75
	3/14/2022					5.15	240.54
	4/19/2022					5.36	240.33
	5/20/2022					5.31	240.38
	6/13/2022					5.95	239.74
	8/24/2022					13.28	232.41
	9/19/2022					15.58	230.11
	10/11/2022					16.50	229.19
	11/15/2022					9.59	236.10
	12/29/2022					5.65	240.04
	2/28/2023					5.41	240.28
	3/20/2023					5.23	240.46
	5/16/2023					7.22	238.47
	8/15/2023					16.84	228.85
	11/8/2023					12.28	233.41
	2/13/2024					6.20	239.49
MW18IL	9/25/2017	L122495	85	77-80	245.81	17.06	228.75
	1/8/2018					6.46	239.35
	4/16/2018					6.78	239.03
	7/16/2018					15.03	230.78
	11/8/2018					16.42	229.39
	3/28/2019					8.53	237.28
	6/20/2019					11.48	234.33
	9/17/2019					16.38	229.43
	12/17/2019					14.43	231.38
	3/2/2020					6.51	239.30
	6/24/2020					9.06	236.75
	10/1/2020					17.39	228.42
	2/22/2021					5.71	240.10
	5/25/2021					10.06	235.75
	8/13/2021					17.74	228.07
	12/1/2021					11.39	234.42
	2/8/2022					6.48	239.33
	5/20/2022					5.76	240.05
	8/23/2022					13.78	232.03
	9/19/2022					16.05	229.76
	10/11/2022					16.94	228.87
	11/15/2022					10.60	235.21
	12/29/2022					6.29	239.52
	2/28/2023					5.95	239.86
	3/20/2023					5.75	240.06
	5/16/2023					7.76	238.05
	8/16/2023					17.24	228.57
	11/9/2023					12.72	233.09
	2/13/2024					6.50	239.31

Table 1. Ground Water Elevation Data, Monitoring Wells

Monitoring Well Designation	Date	OWRD Designation (Well Tag)	Completion Depth of Boring (feet)	Monitored Depth Interval (feet)	Top of Casing (relative to datum) (feet)	Depth to Static Water Level (feet)	Relative Elevation (feet)					
Deep Wells												
MW17D	5/29/2019	L132174	131	121-131	244.38	7.82	236.56					
	6/20/2019					10.75	233.63					
	9/17/2019					16.08	228.30					
	12/17/2019					15.16	229.22					
	3/2/2020					5.15	239.23					
	6/24/2020					8.2	236.18					
	10/1/2020					15.97	228.41					
	2/22/2021					4.19	240.19					
	5/25/2021					9.53	234.85					
	8/13/2021					17.62	226.76					
	12/1/2021					11.49	232.89					
	2/7/2022					5.49	238.89					
	5/19/2022					4.51	239.87					
	8/23/2022					13.15	231.23					
	9/19/2022					16.01	228.37					
	10/11/2022					17.04	227.34					
	11/15/2022					10.70	233.68					
	12/29/2022					6.09	238.29					
	2/28/2023					5.50	238.88					
	5/16/2023					7.50	236.88					
	8/16/2023					17.90	226.48					
	11/9/2023					13.45	230.93					
	2/13/2024					5.52	238.86					
MW19D	3/28/2019	L132173	131	121-131	244.35	5.2	239.15					
	4/25/2019					4.75	239.60					
	6/20/2019					10.88	233.47					
	9/17/2019					16.18	228.17					
	12/17/2019					15.41	228.94					
	3/2/2020					5.27	239.08					
	6/24/2020					8.32	236.03					
	10/1/2020					16.02	228.33					
	2/22/2021					4.28	240.07					
	5/25/2021					9.64	234.71					
	8/13/2021					17.60	226.75					
	12/1/2021					11.53	232.82					
	2/8/2022					5.95	238.40					
	5/19/2022					4.75	239.60					
	8/24/2022					13.29	231.06					
	11/15/2022					Inaccessible	---					
	2/28/2023					5.58	238.77					
	5/17/2023					7.50	236.85					
	8/16/2023					18.01	226.34					
	11/8/2023					13.85	230.50					
	2/13/2024					5.54	238.81					
	IWBU = Intermediate Water-Bearing Unit					Last Monit. Event Min. (IUM)		2.50	233.15			
	* MW12 through MW19 surveyed on June 5, 2017					Last Monit. Event Min (IL)		6.20	6.20			
*MW17D and MW19D surveyed on April 6, 2019.				Last Monit. Event Min (D)		5.52	230.50					
MW20IUM and MW21IUM surveyed on June 29, 2020				Last Monit. Event Max (IUM)		6.36	237.41					
				Last Monit. Event Max (IL)		6.50	233.54					
				Last Monit. Event Max (D)		5.54	230.93					

Well ID	Event Count	Depth to Ground Water (feet btoc)			Ground Water Elevation (feet amsl)		
		Min	Max	Ave	Min	Max	Ave
MW14-IUM	22	6.10	18.02	10.61	228.64	240.56	236.05
MW15-IUM	14	5.01	16.95	9.90	228.61	240.55	235.66
MW16-IUM	22	5.30	19.60	10.44	226.03	240.33	235.19
MW18-IUM	22	5.64	17.45	10.10	228.37	240.18	235.72
MW16-IL	22	5.15	17.22	9.72	228.47	240.54	235.97
MW18-IL	15	5.75	17.74	11.03	228.07	240.06	234.78

Notes: amsl = above mean sea level
btoc = below top of casing

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
Upper Portion of IWBU							
MW12IUM	9/25/2017	16.15	353	0.67	6.06	363	clear
	1/8/2018	12.84	385	0.71	6.37	420	clear
	4/16/2018	11.86	404	0.00	6.54	199	6
	7/16/2018	19.63	333	*	*	136	clear
	11/8/2018	13.45	342	0.72	6.26	48	clear
	3/29/2019	13.63	352	2.07	6.63	215	0
	6/20/2019	16.95	339	0.35	6.48	221	0
	9/17/2019	15.51	348	0.25	6.15	236	0
	12/17/2019	12.86	345	2.41	7.22	256	0
	3/2/2020	12.39	359	0.50	6.50	282	0
	6/24/2020	18.91	313	0.73	6.83	98	17
	10/1/2020	16.05	326	0.42	6.78	59	1
	2/22/2021	13.79	333	0.03	6.88	102	19
	5/26/2021	17.32	328	0.46	6.49	116	57
	8/12/2021	19.12	415	1.05	6.63	66	5
	11/30/2021	15.48	327	2.14	6.44	11	5
	2/7/2022	14.84	378	--	6.44	-166	--
	5/19/2022	15.13	380	0.38	6.59	187	4
	8/23/2022	18.21	346	1.45	6.39	200	4
	11/15/2022	15.33	337	0.11	6.99	77	clear
	2/28/2023	13.04	372	1.10	6.55	279	17
	5/16/2023	18.99	338	1.24	6.48	160	5
	8/15/2023	21.67	333	0.76	6.05	188	47
	11/8/2023	13.89	380	1.73	6.10	248	9
	2/13/2024	12.37	401	2.03	6.60	148	17
MW13IUM	9/25/2017	18.07	1110	2.50	6.63	26	32
	1/8/2018	14.38	1204	0.49	7.32	392	cloudy
	4/16/2018	12.51	1195	0.99	6.62	-56	clear
	7/16/2018	27.12	1010	*	*	159	23
	11/8/2018	14.41	1259	0.42	6.50	48	clear
	3/29/2019	14.34	1561	0.36	6.62	157	14
	6/20/2019	16.72	1453	0.45	6.61	178	29
	9/17/2019	16.54	1409	0.86	6.40	238	22
	12/17/2019	12.05	1860	2.50	6.38	74	13
	3/2/2020	13.57	1530	0.35	6.33	165	0
	6/24/2020	19.41	1440	0.22	6.86	134	24
	10/1/2020	17.13	1307	1.39	7.16	82	149
	2/22/2021	14.43	1581	0.00	6.67	127	840
	5/26/2021	17.36	1550	0.25	6.48	130	93
	8/12/2021	19.27	1420	0.59	5.91	150	17
	11/30/2021	15.96	1693	0.19	6.73	229	58
	2/7/2022	15.46	1522	--	6.48	-238	--
	5/19/2022	15.99	1500	0.97	5.86	144	80
	8/23/2022	19.01	1366	--	6.39	212	65
	11/15/2022	15.34	1490	0.11	7.08	57	clear
	2/28/2023	13.48	1630	0.86	6.59	279	171
	5/16/2023	18.91	1550	4.39	6.52	178	90
	8/15/2023	21.80	1270	2.76	6.28	141	59
	11/8/2023	14.12	1730	0.92	6.09	290	88
	2/13/2024	14.29	1690	1.26	6.55	166	106

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW14IUM	9/25/2017	19.17	3210	2.16	6.16	65	41
	1/8/2018	14.14	2539	0.69	6.51	392	clear
	4/16/2018	13.04	3050	0.00	6.24	199	27
	7/16/2018	24.76	2940	*	*	179	4
	11/8/2018	13.66	2974	0.44	6.19	43	clear
	3/29/2019	15.48	2650	2.16	5.14	128	102
	6/20/2019	16.19	3236	0.18	6.14	207	10
	9/17/2019	15.99	3278	0.64	6.09	228	14
	12/17/2019	11.92	3830	1.38	6.05	86	5
	3/2/2020	13.00	3203	0.15	6.16	287	21
	6/24/2020	20.64	3120	0.68	6.45	157	21
	10/1/2020	19.71	3290	0.36	6.16	161	34
	2/22/2021	14.40	3028	0.00	6.40	125	65
	5/25/2021	16.03	3310	0.83	6.03	151	67
	6/23/2021	17.49	3110	0.22	6.14	280	85
	7/28/2021	25.60	3300	0.50	6.00	-10	10
	8/13/2021	17.74	3580	0.23	5.57	82	4
	11/30/2021	15.54	3288	0.16	6.24	243	29
	12/14/2021	14.13	3220	2.09	5.82	-37	12
	1/13/2022	14.26	2679	1.51	6.38	-139	clear
	2/7/2022	13.85	3130	0.69	5.84	164	54
	3/14/2022	13.54	3210	0.71	6.36	212	30
	4/19/2022	12.03	3300	0.81	6.33	154	18
	5/19/2022	15.27	3145	0.19	6.26	208	60
	6/13/2022	15.60	2910	0.70	5.67	188	0
	8/23/2022	19.81	3110	0.59	6.14	41	46
	9/19/2022	16.85	3353	0.31	5.46	16	--
	10/11/2022	17.91	3090	0.93	6.17	122	25
	11/15/2022	14.32	3053	0.10	6.25	167	clear
	12/29/2022	13.41	2980	0.98	6.07	144	60
	2/28/2023	14.45	3070	0.58	6.23	267	34
	3/20/2023	14.36	3001	2.60	6.20	162	79
	5/16/2023	19.76	3140	1.05	6.13	192	31
	8/15/2023	20.99	2970	1.56	5.91	107	6
	11/8/2023	14.45	3460	0.67	6.16	60	32
	2/14/2024	12.78	3360	0.76	6.40	106	140

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW15IUM	9/25/2017	17.47	1583	0.86	6.02	342	clear
	1/8/2018	14.25	1750	2.18	6.38	98	7
	4/16/2018	12.02	1990	0.00	6.31	254	107
	7/16/2018	19.48	1659	0.38	6.60	148	clear
	11/8/2018	14.47	2070	0.00	6.26	183	clear
	3/29/2019	15.64	1859	0.27	6.36	97	42
	6/20/2019	17.62	1830	1.64	6.13	105	41
	9/17/2019	16.47	2130	1.33	6.15	102	12
	12/17/2019	14.29	2122	0.32	6.92	292	23
	3/2/2020	13.67	1650	0.31	6.15	1182	167
	6/24/2020	19.01	1930	0.30	6.54	149	21
	10/1/2020	17.8	2184	0.55	6.76	93	26
	2/22/2021	14.57	1540	0.39	6.27	132	170
	5/26/2021	17.55	1900	0.00	6.42	392	41
	8/13/2021	17.8	2050	0.24	5.71	100	12
	11/30/2021	16.39	1778	0.18	6.42	154	48
	1/13/2022	15.07	1316	1.53	6.54	-140	clear
	2/7/2022	15.54	1940	0.42	6.14	162	112
	5/19/2022	17.78	1620	0.92	5.71	107	96
	8/24/2022	22.42	1910	0.43	6.25	46	326
	11/15/2022	14.49	1930	1.36	6.20	78	184
	2/28/2023	11.4	1700	0.89	6.17	292	156
	5/16/2023	17.87	1820	1.74	5.69	194	41
	8/15/2023	21.16	1850	5.67	5.99	152	116
	11/8/2023	14.23	1950	0.96	6.26	191	75
	2/13/2024	14.22	1830	0.93	6.57	173	88

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW16IUM	9/25/2017	18.40	2400	2.22	6.17	95	3
	1/8/2018	14.05	2169	0.00	6.29	156	65
	4/16/2018	11.94	2056	1.03	6.25	-43	clear
	7/16/2018	26.32	2170	*	*	186	1
	11/8/2018	14.94	2450	0.00	6.31	180	2
	3/29/2019	18.51	1900	1.79	5.25	121	93
	6/20/2019	17.69	2240	2.01	6.09	85	11
	9/17/2019	16.23	2400	1.15	6.10	101	0
	12/17/2019	13.67	2332	0.19	6.93	275	0
	3/2/2020	13.75	2750	0.17	6.24	301	82
	6/24/2020	20.25	2190	0.40	6.50	168	28
	10/1/2020	17.72	2210	0.39	6.16	159	6
	2/22/2021	13.63	2220	0.40	6.13	153	96
	5/26/2021	15.68	2141	0.00	6.50	43	21
	6/23/2021	18.49	2141	0.09	6.56	-46	443
	7/28/2021	23.7	2080	0.04	6.25	-161	307
	8/12/2021	23.1	1760	0.12	5.72	-188	113
	11/30/2021	15.73	2002	0.22	5.94	-92	225
	12/14/2021	13.36	1910	0.25	5.73	-140	77
	1/13/2022	13.97	1840	0.28	5.57	-130	216
	2/7/2022	13.66	1942	--	6.03	-12	cloudy
	3/14/2022	13.91	1890	0.60	6.33	-149	115
	4/19/2022	10.75	1930	0.52	6.40	-116	116
	5/20/2022	16.61	2097	0.23	6.44	12	33
	6/13/2022	15.64	1950	0.58	5.78	-154	94
	8/24/2022	23.4	2253	0.11	6.34	-16	209
	9/19/2022	19.92	2381	0.22	5.93	-73	251
	10/11/2022	19.06	2060	1.77	6.39	-147	560
	11/15/2022	14.31	2250	0.62	6.41	-149	183
	12/29/2022	13.18	2300	0.62	6.36	-134	120
	2/28/2023	12.4	2320	0.44	6.32	-134	143
	3/20/2023	11.71	2740	0.57	5.64	-102	97
	5/16/2023	20.99	2340	0.48	5.98	-100	212
	8/15/2023	23.38	2200	0.42	6.13	-97	58
	11/8/2023	14.16	2050	0.60	6.44	-225	56
	2/13/2024	12.21	1970	0.76	6.66	-109	140

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW17IUM	9/25/2017	19.94	362	1.92	6.60	89	10
	1/8/2018	14.18	331	0.46	6.00	413	clear
	4/16/2018	12.23	311	0.93	6.59	-38	clear
	7/16/2018	20.91	330	0.35	7.49	33	clear
	11/8/2018	16.53	395	0.00	6.62	189	3
	3/28/2019	15.99	404	0.37	6.66	144	142
	6/20/2019	17.32	385	0.40	6.61	164	2
	9/17/2019	17.7	417	1.06	6.50	2	0
	12/17/2019	14.68	402	0.25	7.31	126	0
	3/2/2020	14.14	394	0.20	6.51	82	0
	6/22/2020	20.34	373	0.32	6.84	54	34
	10/1/2020	18.24	408	0.27	7.03	-77	2
	2/22/2021	13.61	381	3.30	6.50	97	0
	5/26/2021	17.58	386	0.27	6.50	89	63
	6/23/2021	20.74	370	0.40	6.67	199	65
	7/28/2021	24.11	413	0.40	6.42	-8	48
	8/13/2021	18.81	411	0.26	6.33	87	10
	12/1/2021	18.19	421	0.24	6.54	2	3
	12/14/2021	14.76	408	0.39	6.25	2	6
	1/13/2022	15.14	391	0.69	6.11	-23	17
	2/7/2022	12.44	393	0.74	6.33	189	8
	3/14/2022	15.19	361	0.85	6.85	24	6
	4/19/2022	12.23	393	0.51	6.74	16	18
	5/19/2022	18.23	378	1.77	6.01	152	2
	6/13/2022	16.61	391	1.16	5.99	32	0
	8/23/2022	19.86	386	0.66	6.65	52	27
	9/19/2022	20.52	392	0.31	6.56	30	1
	11/16/2022	15.53	391	3.55	5.92	143	clear
	3/1/2023	13.92	419	2.05	6.61	168	12
	3/20/2023	14.07	407	0.96	6.58	159	53
	5/17/2023	21.22	377	0.88	6.57	92	67
	8/16/2023	24.36	361	0.60	6.23	169	50
	11/9/2023	13.73	436	0.61	6.84	-15	3
	2/14/2024	13.44	432	7.33	6.90	110	7

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW18IUM	9/25/2017		603	2.10	6.69	90	3
	1/8/2018	14.49	579	0.00	6.88	136	15
	4/16/2018	11.76	539	0.00	6.86	-8	16
	7/16/2018	22.03	514	0.01	7.29	39	clear
	11/8/2018	14.67	547	0.18	6.61	25	clear
	3/28/2019	16.62	562	0.54	6.56	240	25
	6/20/2019	19.73	480	2.94	6.56	19	13
	9/18/2019	17.39	548	1.36	6.73	50	0
	12/18/2019	12.25	536	1.59	6.79	-19	5
	3/3/2020	15.02	516	0.24	6.68	128	0
	6/22/2020	19.32	483	0.27	7.05	87	28
	10/2/2020	17.02	465	0.54	6.74	128	7
	2/22/2021	14.71	495	0.02	6.99	174	15
	5/25/2021	17.25	489	0.30	6.75	31	57
	6/23/2021	19.85	460	0.50	6.85	197	83
	7/28/2021	28.14	417	0.85	6.67	14	0
	8/13/2021	19.81	489	0.45	6.38	122	5
	12/1/2021	16.59	439	0.32	6.87	93	7
	12/14/2021	15.06	462	0.53	6.48	-1	2
	1/13/2022	14.81	385	1.57	7.05	-145	clear
	2/8/2022	12.24	402	0.30	6.51	42	clear
	3/14/2022	14.63	447	0.81	7.10	-9	6
	4/19/2022	11.26	406	0.64	6.93	-31	20
	5/20/2022	15.61	515	0.73	6.31	206	0
	6/13/2022	16.70	466	0.61	6.22	-35	0
	8/23/2022	20.86	425	0.55	6.70	27	22
	9/19/2022	19.63	456	0.38	6.83	33	0
	10/11/2022	18.99	433	0.84	6.77	117	17
	11/16/2022	12.72	482	1.39	6.93	52	31
	12/29/2022	14.11	989	0.69	6.67	-32	31
	3/1/2023	15.13	488	0.68	6.78	-5	28
	3/20/2023	15.2	500	0.93	6.84	171	4
	5/17/2023	20.33	419	2.43	6.19	97	0
	8/16/2023	22.03	301	0.87	6.39	20	0
	11/8/2023	15.92	410	7.62	6.72	128	3
	2/14/2024	11.43	207	5.53	5.91	199	24

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW19IUM	9/25/2017	18.63	477	0.39	6.23	342	clear
	1/8/2018	15.03	757	0.28	6.99	368	clear
	4/16/2018	13.41	492	0.83	6.85	-59	clear
	7/16/2018	21.3	481	0.41	7.35	43	clear
	11/8/2018	15.92	659	0.00	6.88	196	2
	3/28/2019	15.64	710	2.28	5.84	130	260
	6/20/2019	17.82	619	0.43	6.79	184	2
	9/17/2019	16.89	561	0.19	6.72	197	66
	12/17/2019	13.31	606	1.39	6.75	81	36
	3/2/2020	14.93	826	0.25	6.87	123	302
	6/24/2020	19.42	623	0.47	7.08	51	116
	10/1/2020	22.45	537	0.27	6.78	29	77
	2/22/2021	14.58	759	0.33	6.79	119	139
	5/25/2021	17.01	592	0.51	6.86	309	27
	8/13/2021	18.42	574	0.20	6.23	98	2
	11/30/2021	16.59	578	0.27	6.67	25	33
	2/8/2022	14.32	483	0.34	6.66	34	27
	5/19/2022	16.42	857	0.22	6.86	185	30
	8/24/2022	21.19	503	0.81	6.86	83	55
	11/15/2022	15.8	575	0.10	7.25	45	clear
	2/28/2023	14.53	699	0.60	6.82	245	11
	5/17/2023	20.38	650	4.90	6.76	185	153
	8/15/2023	27.03	536	0.48	6.37	93	7
	11/8/2023	15.79	599	1.33	6.81	59	64
	2/14/2024	12.21	673	1.13	7.10	28	10
MW20IUM	6/24/2020	18.83	1740	0.22	6.60	41	58
	10/2/2020	16.9	904	0.45	6.12	89	127
	2/22/2021	13.14	1600	0.00	6.38	141	507
	5/25/2021	14.94	922	0.14	6.28	363	69
	8/13/2021	16.82	1084	0.13	6.40	89	29
	1/13/2022	13.15	1240	2.80	5.66	109	453
	12/1/2021	14.91	870	0.15	6.02	140	37
	2/8/2022	13.54	837	0.42	6.16	114	30
	5/19/2022	13.73	845	0.19	5.91	114	18
	8/23/2022	17.13	775	0.22	5.95	220	23
	11/16/2022	13.59	830	3.55	5.39	175	clear
	3/1/2023	14.48	850	5.28	6.19	162	5
	5/16/2023	18.99	797	1.07	6.09	216	0
	8/16/2023	21.79	759	0.82	5.89	155	58
	11/8/2023	14.05	862	0.66	6.07	108	2
	2/14/2024	11.84	898	0.83	6.00	155	17

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW21IUM	6/24/2020	21.13	766	0.10	7.72	-45	37
	10/2/2020	20.18	643	0.17	7.35	-106	60
	2/22/2021	15.57	780	0.00	7.09	121	41
	5/25/2021	18.54	744	0.00	7.06	316	169
	8/13/2021	19.96	787	0.08	6.98	38	113
	12/1/2021	19.99	707	0.41	6.68	27	2
	2/8/2022	16.16	800	0.32	6.75	89	clear
	5/19/2022	19.14	289	0.88	6.71	79	1
	8/23/2022	21.32	718	0.23	6.91	173	9
	11/16/2022	18.04	675	3.12	6.10	144	clear
	3/1/2023	15.62	842	0.59	6.97	66	20
	5/16/2023	21.67	836	0.61	6.66	49	0
	8/16/2023	24.47	633	0.61	6.54	146	39
	11/8/2023	17.50	681	0.53	6.80	57	1
	2/13/2024	15.41	883	0.67	7.27	-14	0
Minimum		10.75	207	0.00	5.14	-238	0
Maximum		28.14	3830	7.62	7.72	1182	840
Minimum (recent monitoring event)		11.43	207	0.67	5.91	-109	0
Maximum (recent monitoring event)		15.41	3360	7.33	7.27	199	140
Minimum (last 4 quarters)		11.43	207	0.42	5.69	-225	0
Maximum (last 4 quarters)		27.03	3460	7.62	7.27	290	212
Lower Portion of IWB							
MW12IL	9/25/2017	16.96	426	3.09	7.41	-225	1
	1/8/2018	12.19	464	0.00	7.37	-135	28
	4/16/2018	11.65	382	1.03	7.00	-60	clear
	7/16/2018	25.68	391	*	*	121	0
	11/8/2018	13.07	497	3.05	7.40	119	25
	3/29/2019	13.2	459	3.55	6.22	-35	42
	6/20/2019	15.81	455	0.54	7.27	181	0
	6/20/2019^	16.54	438	0.35	6.84	273	0
	9/17/2019	15.39	484	1.68	7.23	42	0
	12/17/2019	11.77	618	2.01	6.70	72	2
	3/2/2020	12.58	513	0.35	6.66	116	0
	6/24/2020	16.94	463	0.29	7.52	73	10
	10/1/2020	15.91	470	0.37	7.61	36	0
	2/22/2021	13.51	505	0.74	7.08	28	72
	5/26/2021	18.87	459	0.27	7.12	83	67
	8/12/2021	20.46	447	0.18	6.52	110	12
	11/30/2021	15.76	498	0.23	6.93	-10	6
	2/7/2022	14.59	446	--	7.24	-178	--
	5/19/2022	14.9	493	0.40	7.29	208	0
	8/23/2022	17.56	459	0.24	6.99	170	3
	11/15/2022	15.29	428	0.11	7.73	33	clear
	2/28/2023	10.98	467	1.40	6.94	208	51
	5/16/2023	17.33	431	1.27	7.19	26	71
	8/15/2023	21.5	425	0.69	6.84	154	60
	11/8/2023	14.23	470	1.20	7.26	116	7
	2/13/2024	12.95	486	0.86	7.13	16	52

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW16IL	9/25/2017	17.54	353	0.55	6.81	89	clear
	1/8/2018	13.93	420	0.00	7.55	25	269
	4/16/2018	11.7	339	0.76	7.32	-59	clear
	7/16/2018	19.32	352	0.54	8.92	-45	clear
	11/8/2018	15.83	409	0.00	7.55	178	1
	3/29/2019	14.83	354	2.14	6.52	-136	clear
	6/20/2019	17.34	397	0.99	7.27	-127	28
	9/17/2019	15.97	465	2.06	7.32	-25	5
	12/17/2019	13.73	407	0.27	8.17	204	0
	3/2/2020	13.73	409	0.21	7.48	249	30
	6/24/2020	16.89	397	0.31	7.45	72	25
	10/1/2020	16.94	550	0.39	7.18	81	12
	2/22/2021	14.04	401	0.00	7.35	113	48
	5/26/2021	16.19	445	0.00	7.36	409	56
	6/23/2021	19.27	400	0.17	7.36	80	181
	7/28/2021	21.47	433	0.13	7.11	-77	65
	8/12/2021	18.94	477	0.21	7.34	-25	77
	11/30/2021	15.85	451	0.31	7.03	-49	50
	12/14/2021	13.8	410	0.31	6.96	-50	358
	1/13/2022	14.62	396	0.41	6.80	-91	56
	2/7/2022	14.55	415	0.57	6.88	72	104
	3/14/2022	13.93	425	0.61	7.46	-118	170
	4/19/2022	12.38	439	0.72	7.40	-5	81
	5/20/2022	19.08	402	0.54	6.82	117	61
	6/13/2022	15.32	406	0.98	6.77	30	88
	8/24/2022	17.27	398	0.21	7.25	124	41
	9/19/2022	18.68	407	0.22	7.14	-26	175
	10/11/2022	17.29	392	1.12	7.25	-62	223
	11/15/2022	14.16	397	0.58	7.33	-109	274
	12/29/2022	13.73	402	0.99	7.22	-137	240
	2/28/2023	11.30	413	0.84	7.16	141	sl. turbid
	3/20/2023	12.70	466	0.67	6.31	142	89
	5/16/2023	22.61	375	0.60	6.83	82	20
	8/15/2023	25.05	395	0.34	6.86	-87	72
	11/8/2023	14.63	401	0.86	7.40	-6	56
	2/13/2024	13.2	421	1.25	7.34	21	50

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
MW18IL	9/25/2017	19.37	382	0.25	7.34	-94	cloudy
	1/8/2018	13.51	723	0.00	7.54	-150	8
	4/16/2018	12.92	530	0.20	7.46	-148	17
	7/16/2018	24.41	460	*	*	-165	9
	11/8/2018	14.79	403	0.22	7.00	-47	clear
	3/28/2019	18.65	351	4.75	6.32	-145	6
	6/20/2019	18.47	369	0.85	7.22	-230	0
	9/18/2019	16.20	241	0.31	7.65	-161	clear
	12/18/2019	12.40	436	1.31	7.33	-250	3
	3/3/2020	17.10	344	0.20	7.32	-149	0
	6/22/2020	20.09	361	0.20	7.62	-205	15
	10/2/2020	17.15	374	0.33	7.34	-182	8
	2/22/2021	14.89	341	3.10	7.31	-164	0
	5/25/2021	17.85	348	0.56	7.33	-171	53
	8/13/2021	20.65	420	0.16	7.44	-239	35
	12/1/2021	16.56	335	0.22	7.34	-102	16
	2/8/2022	10.84	399	0.13	7.55	41	clear
	5/20/2022	16.27	348	0.27	7.50	-61	54
	8/23/2022	21.32	332	0.54	7.03	-155	23
	11/15/2022	15.87	347	0.49	7.26	-186	30
	12/29/2022	13.23	365	0.77	7.20	-171	35
	3/1/2023	14.70	341	0.61	7.23	-170	37
	5/17/2023	19.47	350	0.48	6.80	-129	0
	8/16/2023	20.09	352	0.45	6.87	-130	0
	11/9/2023	15.82	358	1.25	7.46	-138	4
	2/14/2024	12.63	362	0.95	7.52	-129	1
Minimum		10.84	241	0.00	6.22	-250	0
Maximum		25.68	723	4.75	8.92	409	358
Minimum (recent monitoring event)		12.63	362	0.86	7.13	-129	1
Maximum (recent monitoring event)		13.20	486	1.25	7.52	21	52
Minimum (last 4 quarters)		12.63	350	0.34	6.80	-138	0
Maximum (last 4 quarters)		25.05	486	1.27	7.52	154	72

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
Deep Water-Bearing Unit							
MW17D	5/29/2019	16.57	319	2.08	8.07	-174	0
	6/20/2019	17.27	307	0.16	7.84	-122	5
	9/17/2019	16.9	343	1.00	7.73	-246	0
	12/17/2019	15.01	316	0.14	8.56	111	0
	3/2/2020	14.11	316	0.40	7.64	-141	1
	6/22/2020	20.64	297	0.17	8.07	-187	23
	10/1/2020	18.19	326	0.27	8.28	-298	25
	2/22/2021	14.97	311	0.00	7.61	-40	9
	5/25/2021	16.6	308	0.00	7.70	194	8
	8/13/2021	19.22	319	0.13	6.97	-101	12
	12/1/2021	17.21	339	0.23	7.51	-60	4
	2/8/2022	13.58	327	0.50	7.36	-134	3
	5/19/2022	19.13	302	0.65	7.10	-120	0
	8/23/2022	20.23	300	0.62	7.52	-163	27
	11/16/2022	15.02	316	0.64	7.72	-167	26
	3/1/2023	15.78	319	0.56	7.88	-138	0
	5/17/2023	21.22	295	0.75	7.78	-153	29
	8/16/2023	28.4	103	0.57	7.29	-106	0
	11/9/2023	14.64	331	0.22	8.07	-187	4
	2/14/2024	12.43	336	5.46	7.36	-118	15
MW19D	3/28/2019	14.98	288	3.28	7.16	-206	28
	4/25/2019	16	328	1.27	8.05	-217	12
	6/20/2019	22.73	292	0.75	7.81	-277	9
	9/17/2019	17.86	333	0.13	7.93	-156	67
	12/17/190	12.35	387	1.31	7.72	-291	9
	3/2/2020	14.36	339	0.38	7.91	-100	69
	6/22/2020	19.97	314	0.77	7.97	-174	45
	10/1/2020	22.24	312	0.46	7.78	-230	76
	2/22/2021	14.35	310	0.26	7.75	-188	58
	5/25/2021	16.85	316	0.00	7.55	191	37
	8/13/2021	18.82	338	0.08	6.80	-140	34
	12/1/2021	17.36	314	0.17	7.66	-119	27
	2/8/2022	13.95	334	0.41	7.49	-165	43
	5/19/2022	16.67	324	0.18	7.73	-68	17
	8/24/2022	21.59	310	0.48	7.64	-204	76
	2/28/2023	14.88	334	0.54	7.89	-77	156
	5/17/2023	21.29	299	0.74	7.81	-185	28
	8/16/2023	19.7	337	0.83	7.32	-146	10
	11/8/2023	15.68	321	1.03	7.78	-169	290
	2/14/2024	12.47	330	2.22	7.72	-116	61
Minimum		12.35	103	0	6.8	-298	0
Maximum		28.4	387	5.46	8.56	194	290
Minimum (recent monitoring event)		12.43	330	2.22	7.36	-118	15
Maximum (recent monitoring event)		12.47	336	5.46	7.72	-116	61
Minimum (last 4 quarters)		12.43	103	0.22	7.29	-187	0
Maximum (last 4 quarters)		28.4	337	5.46	8.07	-106	290

Table 2. Summary of Ground Water Parameters, Monitoring Wells

Well ID	Date	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH	Oxidation-Reduction Potential (mV)	Turbidity (NTU)
Off-Site Domestic / Industrial Wells							
W02	12/1/2021	15.16	347	4.15	2.46	-44	2
W03	12/1/2021	15.34	345	1.28	7.44	6	2
W03	12/1/2021	14.72	346	2.65	7.43	-16	3
IWBU = Intermediate Water-Bearing Unit °C = degrees Celcius µS/cm = microsiemens per cenimeter mV = millivolt NTU = Nephelometric Turbidity Unit * = pH and DO probe were not uncovered during monitoring ^ = second set of readings after double the purge amount.							

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID	MW12																										
Sample Location	MW12IUM																										
Date Sampled	6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/29/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/24/2020	10/1/2020	2/22/2021	5/26/2021	8/12/2021	11/30/2021	2/7/2022	5/19/2022	8/23/2022	11/15/2022	2/28/2023	5/16/2023	8/15/2023	11/8/2023	2/13/2024	
Screened Interval	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-46	35-46	35-46	35-46	35-46	35-46	35-46	35-46	35-46	35-46	35-46	35-46	
Sampled By	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-	c, nv	90	110	150	140	71	120	40	58	83	23	57	43	32	43	51	41	13	51	35	25	18	20	28	18	28	
Trichloropropane, 1,2,3-	c, nv	5	7.9	11	10	5.4	7.7	3.3	4.6	5.4	2.1	4.7	3.3	2.9	3.6	4.9	4.0	1.3	4.1	2.9	2.2	1.7	1.8	2.8	1.8	2.7	

Notes:

ND = not detected at or above laboratory method reporting limits

< = not detected above method reporting limit shown.

ug/L = micrograms per Liter

B = analyte detected in the associated Method Blank.

c = carcinogenic

nv = nonvolatile

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

NE = not established.

Concentrations exceed lowest applicable risk-based concentrations.

Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

Upper-middle Intermediate Water-bearing Unit

Lower Intermediate Water-bearing Unit

Deep water-bearing unit

Off-Site Domestic / Industrial Wells

QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells																											
Location ID		MW12																									
Sample Location		MW12IL																									
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/29/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/24/2020	10/1/2020	2/22/2021	5/26/2021	8/12/2021	11/30/2021	2/7/2022	5/19/2022	8/23/2022	11/15/2022	2/28/2023	5/16/2023	8/15/2023	11/8/2023	2/13/2024
Screened Interval		65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	2.2	7.4	<1 [ND]	<1 [ND]	13	7.8	1.9	<1 [ND]	5.2	2.9	<1 [ND]	<1 [ND]	<1 [ND]	1.4	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	1.1	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Notes:																											
ND = not detected at or above laboratory method reporting limits																											
< = not detected above method reporting limit shown.																											
ug/L = micrograms per Liter																											
B = analyte detected in the associated Method Blank.																											
c = carcinogenic																											
nv = nonvolatile																											
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.																											
NE = not established.																											
Bolded concentrations exceed lowest applicable risk-based concentrations.																											
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).																											
(Y) indicates analyte not detected, but detection limit is above screening concentration.																											
Upper-middle Intermediate Water-bearing Unit																											
Lower Intermediate Water-bearing Unit																											
Deep water-bearing unit																											
Off-Site Domestic / Industrial Wells																											
QA/QC Samples																											

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW13																									
Sample Location		MW13IUM																									
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/29/2019	6/20/2019	9/17/2019	12/17/2019	6/24/2020	10/1/2020	2/22/2021	5/26/2021	8/12/2021	11/30/2021	2/7/2022	5/19/2022	8/23/2022	11/15/2022	2/28/2023	5/16/2023	8/15/2023	11/8/2023	2/13/2024	
Screened Interval		35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-	c, nv	13	9.8	13	14	11	23	21	24	28	38	33	21	29	36	37	39	38	34	33	35	41	36	31	51	38	
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	1.1	1.0	1.2	1.3	1.9	1.7	1.2	1.7	2.3	2.3	2.1	2.1	2.2	1.9	2.1	2.2	<1 [ND]	2.3	3.2	2.5	

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NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW14																										
Sample Location		MW14IUM																										
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/29/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/24/2020	10/1/2020	2/22/2021	5/25/2021	8/13/2021	11/30/2021	2/7/2022	5/19/2022	8/23/2022	11/15/2022	2/28/2023	5/16/2023	8/15/2023	11/8/2023	2/14/2024	
Screened Interval		35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-		c, nv	350	270	430	350	310	270	340	270	250	270	300	260	200	290	170	160	250	290	240	180	480	290	200	140	150	140
Trichloropropane, 1,2,3-		c, nv	21	16	32	24	17	18	25	20	17	20	25	19	17	23	15	12	22	24	24	15	39	24	16	14	14	12

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J = The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
NE = not established.

Bolded concentrations exceed lowest applicable risk-based concentrations.

¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

Upper-middle Intermediate Water-bearing Unit

Lower Intermediate Water-bearing Unit

Deep water-bearing unit

Off-Site Domestic / Industrial Wells

QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW15																											
Sample Location		MW15IUM																											
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/29/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/24/2020	10/1/2020	2/22/2021	5/26/2021	8/13/2021	11/30/2021	2/7/2022	5/19/2022	8/24/2022	8/24/2022	11/15/2022	2/28/2023	5/16/2023	8/15/2023	11/8/2023	2/13/2024	
Screened Interval		35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-	c, nv	10	12	10	11	14	16	13	16	22	23	14	19	20	12	17	20	18	21	12	21	21	24	16	16	18	19	17	
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	1.1	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	1.2	<1 [ND]	<1 [ND]	<1 [ND]	1.1	<1 [ND]	

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
µg/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW16																											
Sample Location		MW16IUM																											
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/29/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/24/2020	10/1/2020	2/22/2021	5/26/2021	8/12/2021	11/30/2021	2/7/2022	5/20/2022	8/24/2022	11/15/2022	2/28/2023	5/16/2023	8/15/2023	11/8/2023	2/13/2024		
Screened Interval		35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45		
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW		
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)		
Dichloropropane, 1,2-		c, nv	450	350	760	500	300	330	360	340	270	250	680	320	180	290	150	150	210	230	230	94	60	200	19	21	49	65	
Trichloropropane, 1,2,3-		c, nv	23	19	50	31	20	21	24	23	17	16	47	21	16	21	13	8.0 j	9.0	7.4 J js	8.2	2.4	1.8	8.1	<1 [ND]	<1 [ND]	1.9	2.7	

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
µg/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

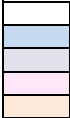


Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW-16																									
Sample Location		MW16IL																									
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/29/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/24/2020	10/1/2020	2/22/2021	5/26/2021	8/12/2021	11/30/2021	2/7/2022	5/20/2022	8/24/2022	11/15/2022	2/28/2023	5/16/2023	8/15/2023	11/8/2023	2/13/2024
Screened Interval		65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75	65-75
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	2.5	9.7	<1 [ND]	<1 [ND]	<1 [ND]	35	<1 [ND]	5.4	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	2.6	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile

J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW17																											
Sample Location		MW17IUM																											
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/28/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/22/2020	10/1/2020	2/23/2021	5/25/2021	8/13/2021	12/1/2021	2/9/2022	11/16/2022	5/19/2022	8/23/2022	11/16/2022	3/2/2023	5/17/2023	8/16/2023	11/9/2023	2/14/2024	
Screened Interval		35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	
Trichloropropane, 1,2,3-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile

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

NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW17																					
Sample Location		MW17D																					
Date Sampled		5/29/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/22/2020	10/1/2020	2/23/2021	5/25/2021	8/13/2021	12/1/2021	2/9/2022	5/19/2022	8/23/2022	11/16/2022	3/2/2023	5/17/2023	5/17/2023	8/16/2023	11/9/2023	2/14/2024	
Screened Interval		121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW18																									
Sample Location		MW18IUM																									
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/28/2019	6/20/2019	9/18/2019	12/18/2019	3/3/2020	6/22/2020	10/2/2020	2/23/2021	5/25/2021	8/13/2021	12/1/2021	2/8/2022	5/20/2022	8/23/2022	11/16/2022	3/1/2023	5/17/2023	8/16/2023	11/9/2023	2/14/2024
Screened Interval		35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-	c, nv	22	23	5.2	4.9	16	27	17	11	5.6	6.8	6.9	8.7	5.3	10	13	15	14	7.6	19	5.2	7.0	15.0	9.6	2.0	3.0	<1 [ND]
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW18																									
Sample Location		MW18IL																									
Date Sampled		9/25/2017	1/8/2018	1/9/2018	4/16/2018	7/16/2018	11/8/2018	3/28/2019	6/20/2019	9/18/2019	12/18/2019	3/3/2020	6/22/2020	10/2/2020	2/23/2021	5/25/2021	8/13/2021	12/1/2021	2/8/2022	5/20/2022	8/23/2022	11/15/2022	3/1/2023	5/17/2023	8/16/2023	11/9/2023	2/14/2024
Screened Interval		77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80	77-80
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-		c, nv	1.4	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
NE = not established.

Bolded concentrations exceed lowest applicable risk-based concentrations.

¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

Upper-middle Intermediate Water-bearing Unit

Lower Intermediate Water-bearing Unit

Deep water-bearing unit

Off-Site Domestic / Industrial Wells

QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW19																											
Sample Location		MW19IUM																											
Date Sampled		6/7/2017	9/25/2017	1/8/2018	4/16/2018	7/16/2018	11/8/2018	3/28/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/22/2020	10/1/2020	2/22/2021	5/25/2021	8/13/2021	11/30/2021	2/8/2022	5/19/2022	8/24/2022	11/15/2022	2/28/2023	5/17/2023	8/15/2023	11/8/2023	2/14/2024		
Screened Interval		35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45		
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW		
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)		
Dichloropropane, 1,2-		c, nv	190	47	160	90	60	77	120	71	62	60	100	84	51	95	60	50	51	37	110	38	59	120	84	53	60	77	
Trichloropropane, 1,2,3-		c, nv	7.8	1.9	8.8	4.8	2.4	3.6	6.1	3.5	2.7	3.2	6.1	4.4	2.9	5.7	3.6	2.7	2.9	1.9	7.2	1.9	3.0	7.1	4.8	3.0	3.9	4.4	

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile

J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW19																			
Sample Location		MW19D																			
Date Sampled		3/28/2019	4/25/2019	6/20/2019	9/17/2019	12/17/2019	3/2/2020	6/22/2020	10/1/2020	2/22/2021	5/25/2021	8/13/2021	12/1/2021	2/8/2022	5/19/2022	8/24/2022	2/28/2023	5/17/2023	8/16/2023	11/8/2023	2/14/2024
Screened Interval		121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131	121-131
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW20														
Sample Location		MW20IUM														
Date Sampled		6/24/2020	10/2/2020	2/22/2021	5/25/2021	8/13/2021	12/1/2021	2/9/2022	5/19/2022	8/23/2022	11/16/2022	3/1/2023	5/16/2023	8/16/2023	11/8/2023	2/14/2024
Screened Interval		28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33	28-33
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		MW21														
Sample Location		MW21IUM														
Date Sampled		6/24/2020	10/2/2020	2/22/2021	5/25/2021	8/13/2021	12/1/2021	2/8/2022	5/19/2022	8/23/2022	11/16/2022	3/1/2023	5/16/2023	8/16/2023	11/8/2023	2/13/2024
Screened Interval		25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35	25-35
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		W01 (Vacant Lot)							W02 [(L&M Ind. Fabrication, Old Well (decommissioned))]										W02 (L&M Ind. Fabrication, Replacement Well)			
Sample Location		W01	W01	W01	W01	W01	W01	W01	W02	W02	W02	W02	W02	W02	W02	W02	W02	W02	W02	WW02	WW02	WW02
Date Sampled		1/9/2018	7/17/2018	6/25/2019	9/18/2019	12/18/2019	3/3/2020	6/22/2019	1/9/2018	7/17/2018	6/25/2019	9/18/2019	12/18/2019	3/3/2020	6/22/2020	10/2/2020	2/23/2021	5/26/2021	8/13/2021	12/1/2021	2/8/2022	8/24/2022
Screened Interval		66-77	66-77	66-77	66-77	66-77	66-77	66-77	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	119-137	119-137	119-137	119-137
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	1.1	2.1	1.2	3.7	2.3	1.9	4.8	5.6	3.7	7.2	4.9	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		W03 [(L&M Ind. Fabrication, Old Well (decommissioned))]										W03 (L&M Ind. Fabrication, Replacement Well)					W04 [(L&M Ind. Fabrication, Old Well (decommissioned))]										
Sample Location		W03	W03	W03	W03	W03	W03	W03	W03	W03	W03	W03	WW03	WW03	WW03	WW03	W04	W04	W04	W04	W04	W04	W04	W04	W04	W04	
Date Sampled		1/9/2018	7/17/2018	6/25/2019	9/18/2019	12/18/2019	3/3/2020	6/22/2020	10/2/2020	2/23/2021	5/26/2021	8/13/2021	12/1/2021	2/8/2022	5/20/2022	8/24/2022	1/9/2018	7/17/2018	6/25/2019	9/18/2019	12/18/2019	3/3/2020	6/22/2020	10/2/2020	2/23/2021	5/26/2021	
Screened Interval		40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	40 (est.)	113.5-133.5	113.5-133.5	113.5-133.5	113.5-133.5	113.5-133.5	48	48	48	48	48	48	48	48	48	48	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-		c, nv	8.3	13	12	11	16	10	13	11	9.4	10	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	10	12	5.3	2.0	1.2	5.3	5.1	1.2	4.5	2.1
Trichloropropane, 1,2,3-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	1.1	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with ththe analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		W04 (L&M Ind. Fabrication, Replacement Well)					W14 (W. Summit)	W19 (Tasman)
Sample Location		W04	WW04- 211201	WW04	WW04	WW04	W14	W19
Date Sampled		8/13/2021	12/1/2021	2/8/2022	5/20/2022	8/24/2022	6/22/2020	6/22/2020
Screened Interval		121-141	121-141	113.5-133.5	113.5-133.5	113.5-133.5	74	---
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest		Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]
Trichloropropane, 1,2,3-		c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thtbe analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		QA/QC (field duplicates)																					
Sample Location		FD-170607	MW12IUM (dup)	MW12IL (dup)	MW13IUM (dup)	MWFD/GW-190917	MWFD	WFD-200622	MWFD/GW-200622	MWFD/GW-201002	MWFD/GW-210222	MWFD-GW-210526	MWFD-GW-210813	MWFD-GW-211130	MWFD-GW-220207	MWFD-GW-220519	FD-GW-220823	FD-GW-221116 (MW17-IUM)	FD-GW-230228 (MW13-IUM)	FD-GW-230516 (MW12-IUM)	FD01-GW-230816 (MW18-IL)	FD-GW-231108 (MW14-IUM)	MWFD-GW-240214
Date Sampled		6/7/2017	4/16/2018	6/20/2019	6/20/2019	9/17/2019	3/3/2020	6/22/2020	6/22/2020	10/2/2020	2/22/2021	5/26/2021	8/13/2021	11/30/2021	2/7/2022	5/19/2022	8/23/2022	11/16/2022	2/28/2023	5/16/2023	8/16/2023	11/8/2023	2/14/2024
Screened Interval		--	35-45	65-75	35-45	35-45	35-45	---	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	35-45	77-80	35-45	35-45
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)
Dichloropropane, 1,2-	c, nv	<1 [ND]	140	<1 [ND]	24	300	6.4	<1 [ND]	83	5.8	260	48	21	47	50	110	25	<1 ND	33	30	<1 [ND]	140	<1 [ND]
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	10	<1 [ND]	1.2	18	<1 [ND]	<1 [ND]	4.3	<1 [ND]	19	4.4	<1 [ND]	2.7	3.9	6.6	2.0	<1 ND	2	2.7	<1 [ND]	13	<1 [ND]

Notes:
ND = not detected at or above laboratory method reporting limits
< = not detected above method reporting limit shown.
ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
c = carcinogenic
nv = nonvolatile
J = The internal standard associated with thte analyte is out of control limits. The reported concentration is an estimate.
NE = not established.
Bolded concentrations exceed lowest applicable risk-based concentrations.
¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).
(Y) indicates analyte not detected, but detection limit is above screening concentration.
Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		QA/QC (trip blanks)																									
Sample Location		Trip Blank																									
Date Sampled		6/8/2017	3/2/2020	3/3/2020	6/22/2020	6/24/2020	10/1/2020	10/2/2020	2/23/2021	5/26/2021	8/13/2021	11/30/2021	12/1/2021	2/7/2022	5/19/2022	5/20/2022	8/23/2022	11/15/2022	2/28/2023	3/1/2023	5/16/2023	5/17/2023	8/15/2023	11/8/2023	2/13/2024	2/14/2024	
Screened Interval		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Sampled By		ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	ENW	
Constituent of Interest	Note	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	µg/L (ppb)	
Dichloropropane, 1,2-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	
Trichloropropane, 1,2,3-	c, nv	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	<1 [ND]	

Notes:

ND = not detected at or above laboratory method reporting limits

< = not detected above method reporting limit shown.

ug/L = micrograms per Liter

B = analyte detected in the associated Method Blank.

c = carcinogenic

nv = nonvolatile

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

NE = not established.

Bolded concentrations exceed lowest applicable risk-based concentrations.

¹ Lowest Applicable Risk-Based Concentration for ground water (Occupational, Ground Water Ingestion).

(Y) indicates analyte not detected, but detection limit is above screening concentration.

Upper-middle Intermediate Water-bearing Unit

Lower Intermediate Water-bearing Unit

Deep water-bearing unit

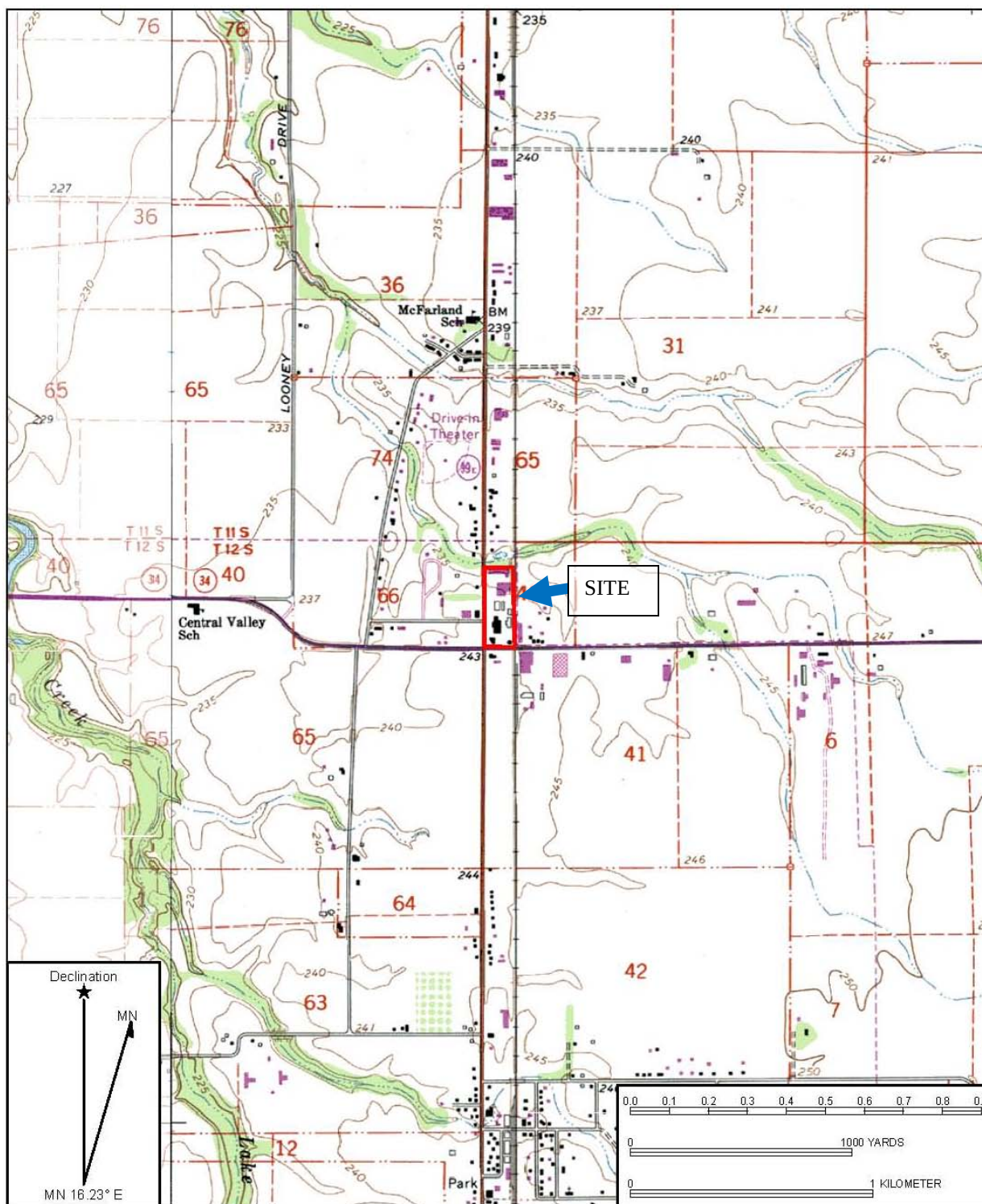
Off-Site Domestic / Industrial Wells

QA/QC Samples

Table 2 - Summary of Analytical Data, Monitoring Wells and Select Off-site Wells

Location ID		Maximum Ground Water Concentration (I _{UM})	Maximum Ground Water Concentration (Last Four Quarters of Monitoring, I _{UM})	Maximum Ground Water Concentration (Last Four Quarters of Monitoring, I _L)	Maximum Ground Water Concentration (Last Four Quarters of Monitoring, D)	Maximum Ground Water Concentration (Offsite Wells, Adjacent Downgradient Properties)	Lowest Applicable RBC (GW) ¹	COPC in Upper Portion of Intermediate Unit?	COPC in Lower Portion of Intermediate Unit?	COPC in Deep Unit?	COPC in Offsite Wells?
Sample Location											
Date Sampled											
Screened Interval											
Sampled By											
Constituent of Interest	Note	µg/L (ppb)						Y/N	Y/N	Y/N	Y/N
Dichloropropane, 1,2-	c, nv	760	200	<1 [ND]	<1 [ND]	1.1	1.9	Y	N	N	N
Trichloropropane, 1,2,3-	c, nv	50	16	<1 [ND]	<1 [ND]	<1 [ND]	0.0023	Y	(Y)	(Y)	(Y)

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ND = not detected at or above laboratory method reporting limits
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ug/L = micrograms per Liter
B = analyte detected in the associated Method Blank.
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Upper-middle Intermediate Water-bearing Unit
Lower Intermediate Water-bearing Unit
Deep water-bearing unit
Off-Site Domestic / Industrial Wells
QA/QC Samples



Source: USGS Topographic Map, 7.5-Minute Tangent, Oregon Quadrangle, 1969, photorevised 1986

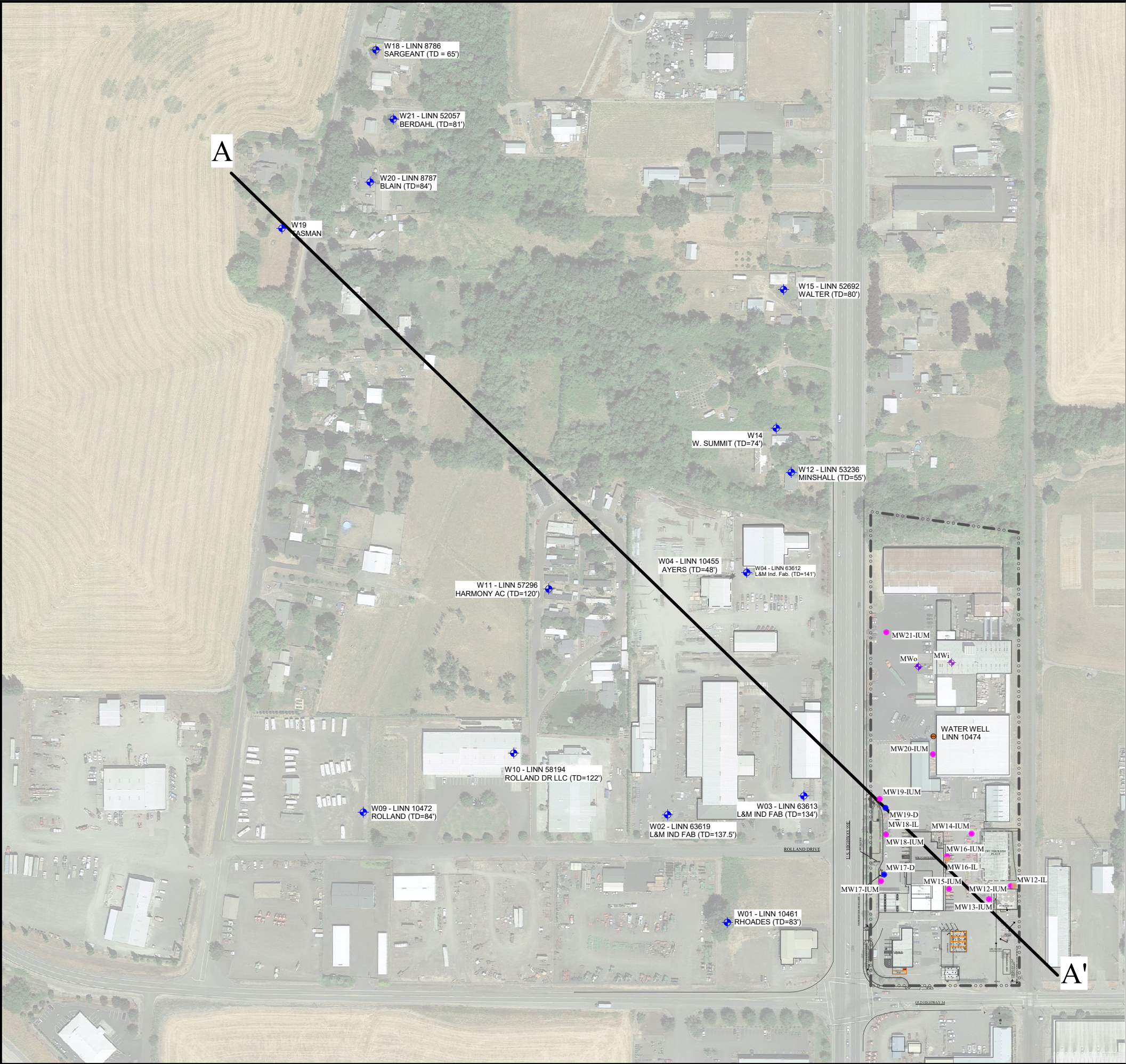


Date Drawn: 2/13/2012
CAD File Name: 160-02001-10.fig_1
Drawn By: LDG
Approved By: NMW

Cenex Harvest States
33685 Highway 99 East
Tangent, Oregon

Site Vicinity Map

Project No.
160-02001
Figure
1



LEGEND:

SUBJECT SITE PROPERTY BOUNDARY

BUILDING LOCATION

FORMER DRY FERTILIZER PLANT (DEMOLISHED)

EXISTING MONITORING WELLS, SWBU

UPPER-MIDDLE IWBU WELL

LOWER IWBU WELL

DEEP MONITORING WELL

OFF-SITE WATER WELLS

DWBU

DEEP WATER BEARING UNIT

IWBU

INTERMEDIATE WATER BEARING UNIT

- NOTES:
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

APPROXIMATE SCALE

0250500FEET

PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 2
SITE OVERVIEW
AND
HYDROSTRATIGRAPHIC PROFILE
FORMER CHS FACILITY
33685 HIGWAY 99E
TANGENT, OREGON



LEGEND:

SUBJECT SITE PROPERTY BOUNDARY

BUILDING LOCATION

FORMER DRY FERTILIZER PLANT (DEMOLISHED)

OFF-SITE WATER WELLS

MONITORING WELL
(SHALLOW WATER-BEARING UNIT)

UPPER-MIDDLE IWBU WELL

LOWER IWBU WELL

DEEP MONITORING WELL

ENW'S (2013) RECONNAISSANCE BORING

IWBU

INTERMEDIATE WATER BEARING UNIT

DWBU

DEEP WATER BEARING UNIT

- NOTES:
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2019 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

APPROXIMATE SCALE

environmental natural resource consultants

PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 3

SITE PLAN

FORMER CHS FACILITY
33685 HIGHWAY 99E
TANGENT, OREGON

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER 160-02001(V01)
H. ROMER	2/26/2024	E. CHAPMAN	2/26/2024	L. GREEN	2/26/2024	

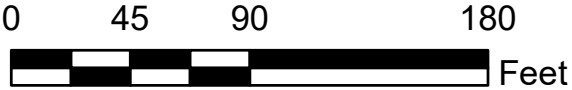


LEGEND:

- SUBJECT PROPERTY BOUNDARY
- SUBJECT BUILDING
- FORMER DRY FERTILIZER PLAND (DEMOLISHED)
- UM WELLS- WATER LEVEL (FEET)
- EXISTING MONITORING WELLS, SWBU
- LOWER IWBU WELL
- UPPER-MIDDLE IWBU WELL

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION
4. IWBU = INTERMEDIATE WATER BEARING UNIT
5. 229351 GROUND WATER ELEVATION (FEET ABOVE MEAN SEA LEVEL (AMSL))
6. GROUND WATER PIEZOMETRIC CONTOURS ARE FROM WATER LEVELS MEASURED ON NOVEMBER 8, 2023.





environmental natural resource consultants

FIGURE 4

PIEZOMETRIC SURFACE PLOT,
UPPER PORTION OF THE INTERMEDIATE
WATER-BEARING UNIT
FIRST QUARTER 2024

FORMER CHS FACILITY
33685 HIGHWAY 99E
TANGENT, OREGON

DRAWN BY		CHECKED BY	APPROVED BY	DRAWING NUMBER
H. ROMER	2/26/2024	E. CHAPMAN	L. GREEN	
				160-02001(V01)



LEGEND:

- SUBJECT PROPERTY BOUNDARY
- SUBJECT BUILDING
- FORMER DRY FERTILIZER PLANT (DEMOLISHED)
- IL WELLS - WATER LEVEL (FEET)
- LOWER IWBU WELL
- UPPER-MIDDLE IWBU WELL

- NOTES:**
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND ENW FIELD NOTES.
 2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
 3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION
 4. IWBU = INTERMEDIATE WATER BEARING UNIT
 5. 229351 GROUND WATER ELEVATION (FEET ABOVE MEAN SEA LEVEL (AMSL))
 6. GROUND WATER PIEZOMETRIC CONTOURS ARE FROM WATER LEVELS MEASURED ON NOVEMBER 8, 2023.

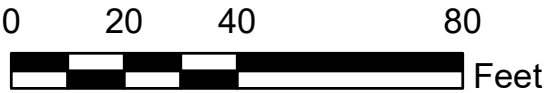


FIGURE 5

**PIEZOMETRIC SURFACE PLOT,
LOWER PORTION OF THE INTERMEDIATE
WATER-BEARING UNIT
FIRST QUARTER 2024**

**FORMER CHS FACILITY
33685 HIGHWAY 99E
TANGENT, OREGON**



LEGEND:

SUBJECT PROPERTY BOUNDARY

SUBJECT BUILDING

FORMER DRY FERTILIZER PLANT (DEMOLISHED)

UM WELLS - DCP ISOPLETHS (UG/L)

EXISTING MONITORING WELLS, SWBU

LOWER IWBU WELL

UPPER-MIDDLE IWBU WELL

- NOTES:
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2022 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION

050100200

Feet

EVRENNORTHWESTINC.

environmental natural resource consultants

FIGURE 6

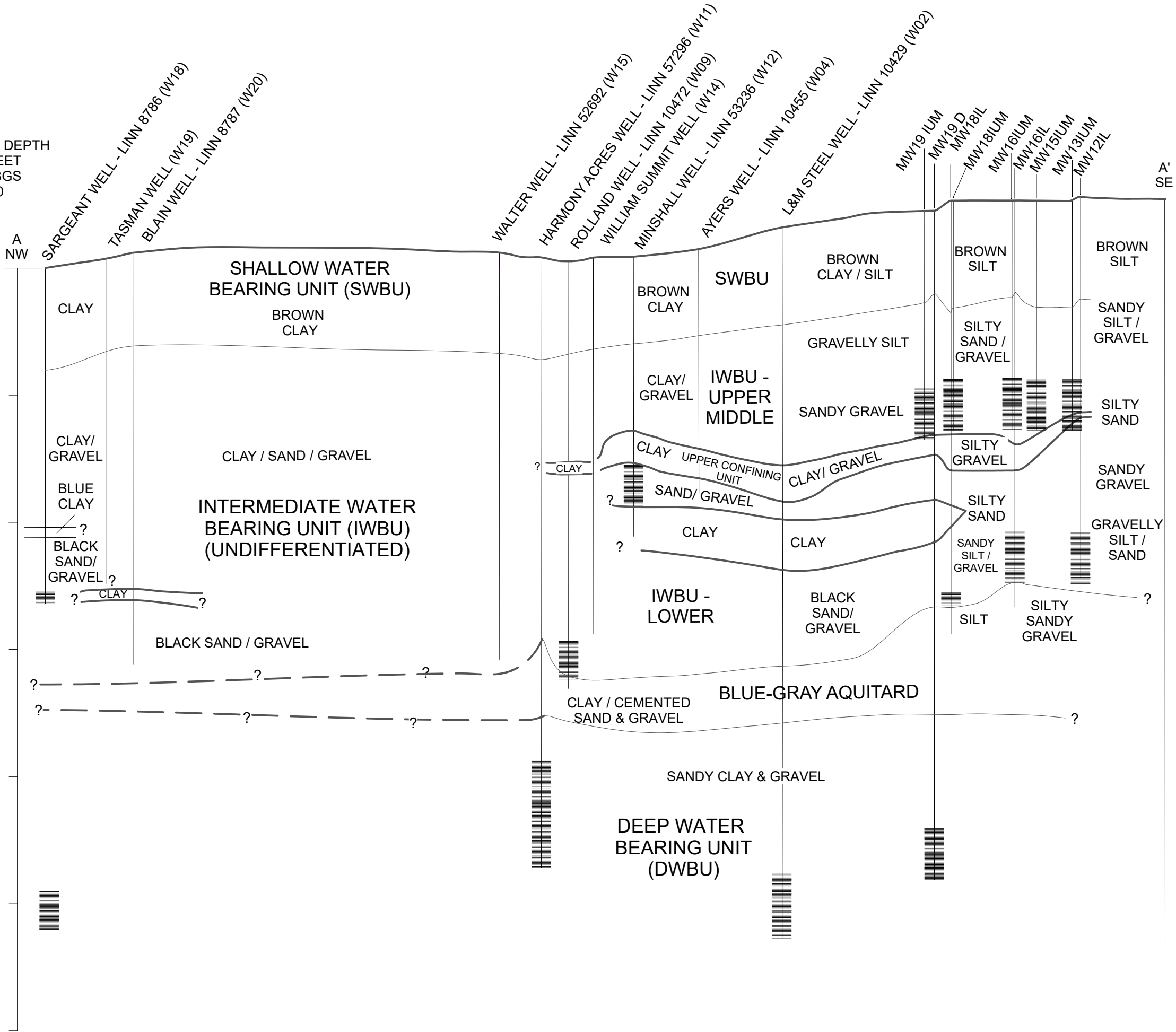
DCP - ISOCONCENTRATION PLOT
UPPER PORTION OF THE INTERMEDIATE
WATER BEARING UNIT FIRST QUARTER 2024

FORMER CHS FACILITY
33685 HIGHWAY 99E
TANGENT, OREGON

Appendix A

Hydrostratigraphic Profile A-A'

ELEVATION / DEPTH
FEET / FEET
AMSL / BGS
322 / 0



Appendix B

Field Sampling Data Sheets

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date:

Well ID: MW12-TUM

Start Time: 7:11

5.64

WELL PURGING INFORMATION

[illegible]

Total Purged:

Tubing: 3/8 inch LDPE, dedicated.

0.15 L/m

2 inch

N/A

Approx. Pump/Intake Depth:

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MWI2-IUM-6W-240213	11:35

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Date:

GROUNDWATER SAMPLING FIELD FORM

PROJECT NAME: **CHS - Tangent**

PROJECT NUMBER: 160-02001-08

Event: Groundwater Monitoring

Date:

2/13/2

Field Personnel: Nick Popovich and Jordan Morris

Well ID: MW13-TUM

Weather Conditions:

Clouds

Start Time:

1142

DTW (prior to purging):

607

WELL PURGING INFORMATION

[illegible]

Total Purged:

Tubing: 3/8 inch LDPE, dedicated.

Purge Pumping Rate (approx. L/m):

0.15 mL

Well casing (in. diam):

2 inch

Decontamination method:

N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW13-IUM-GW-240213	12: A

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☐ Yes☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date:

GROUNDWATER SAMPLING FIELD FORM

CT NAME: CHS - Tangent

PROJECT NUMBER: 160-02001-08

Date: 07-14-24

Donnerstag, 1. April 2010 14:00 Nick Popovich und Jordan Morris

Well ID: 42 well-10.0

Start Time: 17:19

✓ RW (prior to purg):

WELL PURGING INFORMATION

[illegible]

Total Purged: 361

Tubing: 3/8 inch LDPE, dedicated.

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2 inch

Decontamination method:

N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	AW14-TUM-GW-24024	12:43

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date:

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date: 02-13-24

Well ID: MH-15-100

Start Time: 11:54

WELL PURGING INFORMATION

Begin Sampling

Total Purged: 4.26

Purge Pumping Rate (approx. L/m): 0.15

Well casing (in. diam): 2 inch

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot	Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot
--	--

WELL CONDITION

Recommended Well Repairs/Additional Notes:

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

MW 15-DM-GW-24 02B 12:25

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Date: 07-13-24

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date: 02-13-24

Well ID: MW16-TW

Start Time: 12:47

WELL PURGING INFORMATION	
--------------------------	--

[illegible]

Total Purged:

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2 inch

N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MWG-10m-GW-240213	13:09

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

odor to purge water.

Signature of Field Personnel:

Date: 02-13-29

GROUNDWATER SAMPLING FIELD FORM

PROJECT NAME: **CHS - Tangent**

PROJECT NUMBER: 160-02001-08

Event: Groundwater Monitoring

Date: 02/ 14 /22

Field Personnel: Bailey Fawver and Dan Saiko

Well ID: MW17-1001

Weather Conditions:

Start Time: 9:56

DTW (prior to purging):

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.0L

Tubing: 3/8 inch LDPE, dedicated.

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2 inch

Decontamination method:

N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: $3/8'' = 0.0026$ gal/foot; $1/4'' = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW17-ICM-GW-240214	10:24

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Field Duplicate (MWFD-GW-240214) on this well.

Signature of Field Personnel:

Date: 02-14-24

GROUNDWATER SAMPLING FIELD FORM

PROJECT NAME: **CHS - Tangent**

PROJECT NUMBER: 160-02001-08

Event: Groundwater Monitoring

Date: 02/ 14 /22

Field Personnel: Bailey Fawver and Dan Sajko

Well ID: MW18-IV m

Weather Conditions: Rain

Start Time: 11:26

DTW (prior to purging): 0.30

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.00

Tubing: 3/8 inch LDPE, dedicated.

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2 inch

Decontamination method: N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW18-JW-GW-240219	11:45

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date:

GROUNDWATER SAMPLING FIELD FORM

PROJECT NAME: **CHS - Tangent**

PROJECT NUMBER: 160-02001-08

Event: Groundwater Monitoring

Date: 02/ 14 /22

Field Personnel: Bailey Fawver and Dan Sajko

Well ID: MW19-11/11

Weather Conditions: Light

Start Time: 11:38

DTW (prior to purging): 4.96

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.6 L

Tubing: 3/8 inch LDPE, dedicated.

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2 inch

Decontamination method: N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW 19-IDM-240214	12:03

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date: 02-14-24

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date:

Well ID: MW-20-T in

Start Time: 12:30

5.25

[illegible]

Tubing: 3/8 inch LDPE, dedicated.

415 L/m

Well casing (in. diam): 2 inch

N/A

Approx. Pump/Intake Depth:

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

Recommended Well Repairs/Additional Notes:

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3		
					MW20-TUM-GW-24024	13:04

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Date:

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date: 02-13-24

Well ID: MW21-1000

Start Time: 13:25

WELL PURGING INFORMATION									
Time (00:00 - 23:59)	DTW During Purging (feet)	Pumping Rate (L/min)	Temperature (degree C)	Specific Conductivity (mS/cm), +3%	Dissolved Oxygen (mg/L), +10%	Water pH (S.U.), +0.1%	ORP (mV), +10 mV	Turbidity (NTU), +10%	Total Quantity Purged (gallons/liters)
13:29	2.64	0.15	14.98	0.865	1.87	7.28	-17	1.0	0.6
13:33	2.66	0.15	15.24	0.868	0.98	7.24	-17	0.2	1.2
13:37	2.66	0.15	15.25	0.882	0.85	7.27	-17	0.0	1.8
13:41	2.67	0.15	15.30	0.885	0.74	7.27	-16	0.0	2.4
13:45	2.67	0.15	15.29	0.886	0.69	7.27	-14	0.0	3.0
13:49	2.67	0.15	15.41	0.883	0.67	7.27	-14	0.0	3.6
Begin Sampling									

Total Purged: 5.6L

Well casing (in. diam): 2 inch

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW21-10m-GW-240213	1345h

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Date: 07-13-24

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date: 2/13/24

Well ID: MW12-IL

Start Time: 10:09

[illegible]

Total Purged:

Well casing (in. diam): 2 inch

Approx. Pump/Intake Depth:

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW12-IL- GW-240213	11.05

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Date:

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date: 2-13-24

Well ID: MW16-IL

Start Time: 12:51

DTW (prior to purging): 6.2

[illegible]

Total Purged:

Purge Pumping Rate (approx. L/m): 0.15 m/L

Well casing (in. diam): 2 inch

Decontamination method: N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW16-IL-GW-240213	1:29

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☐ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date:

GROUNDWATER SAMPLING FIELD FORM

PROJECT NAME: **CHS - Tangent**

Event: Groundwater Monitoring

PROJECT NUMBER: 160-02001-08

Date: 02/14/22

Field Personnel: Bailey Fawver and Dan Sajko

Well ID: MW18-11

Weather Conditions: Rain

Start Time: 10:42

DTW (prior to purging): 10.53

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.61

Tubing: 3/8 inch LDPE, dedicated.

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2 inch

Decontamination method: N/A

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot

Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3		

Method of Transportation of samples:	FedEx	Courier
--------------------------------------	-------	---------

All samples were immediately placed into a cooler and packed with ice or "blue ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date: 02-14-24

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date: 02/14/22

Well ID: MW17-D

Start Time: 9:59

DTW (prior to purging): 5.50

WELL PURGING INFORMATION

[illegible]

Total Purged: 3 OL

Purge Pumping Rate (approx. L/m): 0.15

Well casing (in. diam): 2 inch

Approx. Pump/Intake Depth:

Well Conversion Factors: 2" = 0.163 gal / foot; 1" = 0.0408 gal/foot	Tubing: 3/8" = 0.0026 gal/foot; 1/4" = 0.0016 gal/foot
--	--

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	MW17-D-GW-240214	10:31

Method of Transportation of samples: FedEx Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date: 02-14-24

GROUNDWATER SAMPLING FIELD FORM

PROJECT NUMBER: 160-02001-08

Date: 02/ 14 /22

Well ID: MW19-D

Start Time: 11:52

5.5

WELL PURGING INFORMATION

[illegible]

Total Purged: 3.0L

Purge Pumping Rate (approx. L/m):

Well casing (in. diam): 2 inch

Approx. Pump/Intake Depth:

Tubing: $3/8" = 0.0026$ gal/foot; $1/4" = 0.0016$ gal/foot

WELL CONDITION

Recommended Well Repairs/Additional Notes:

QA/QC Sample: ☐ Duplicate ☐ Lab QA/QC ☐ Equipment Blank ☐ None

Sampling Method: ☐ Grundfos Pump ☒ Peristaltic Pump ☐ Bladder Pump

SAMPLE INFORMATION

Analytical Parameters	Destination Laboratory	Preservative	Bottle Size	Number of bottles	Sample ID	Time Sampled
1,2-DCP and 1,2,3-TCP by EPA 8260	F & B	HCl	40 ml	3	11W19-D-GW-246214	12:18 12:24

Method of Transportation of samples: ☒ FedEx ☐ Courier

All samples were immediately placed into a cooler and packed with ice or "blue Ice"

☒ Yes ☐ No

Field Observations/Notes of sampling event:

Signature of Field Personnel:

Date: 02-14-29

Appendix C

Laboratory Analytical Reports

Analytical Laboratory Data Validation Check Sheet

Project Name: Tangent, Oregon

Project Number: 160-02001-08

Date of Review: 2/21/2024

Lab. Name: F&BI

Lab Batch 402190

Chain of Custody

- | | | |
|--|---|--|
| 1.) Are all requested analyses reported? | ☒ yes | ☐ no |
| 2.) Were the requested methods used? | ☒ yes | ☐ no |
| 3.) Trip blank submitted? | ☒ yes | ☐ no |
| 4.) Field blank submitted? | ☐ yes | ☒ no |

Timing

- | | | | |
|--|---|-----------------------------|--|
| 5.) Samples extracted within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 6.) Analysis performed within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Quality Assurance/Quality Control

- | | | | |
|--|---|--|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | ☒ yes | ☐ no | |
| 8.) Are all reported values above either MRL or MDL? | ☒ yes | ☐ no | |
| 9.) Are all values between the MDL & PQL tagged as trace? | ☐ yes | ☐ no | ☒ NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | ☐ yes | ☒ no | |
| 10b.) If so, are they footnoted? | ☐ yes | ☐ no | ☒ NA |
| 11.) Lab method blank completed? | ☒ yes | ☐ no | |
| 12.) Lab, Field, or Trip Blank(s) report detections? | ☐ yes | ☒ no | |
| If yes, indicate blank type, chemical(s) and concentration(s): | | | |
| 13.) For inorganics and metals, is there one method blank for each analyte? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 14.) For VOCs, is there one method blank for each day of analysis? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 15.) For SVOC's, is there one method blank for each extraction batch? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |

Accuracy

- | | | | |
|--|---|-----------------------------|--|
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | ☒ yes | ☐ no | ☐ NA |
| Do all surrogate spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 17.) Is there a spike recovery for all Laboratory Control Samples? | ☒ yes | ☐ no | ☐ NA |
| Do all LCS/LCSD spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 18.) Are all LCS/LCSD RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Precision

- | | | | |
|---|---|-----------------------------|--|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

☐yes ☐no ☒NA

Comments:

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly. (ca)

Initial Review By: AR

Final Review By: _____

Analytical Laboratory Data Validation Check Sheet

Project Name: Tangent, Oregon

Project Number: 160-02001-08

Date of Review: 2/23/2024

Lab. Name: F&BI

Lab Batch 402211

Chain of Custody

- | | | |
|--|---|--|
| 1.) Are all requested analyses reported? | ☒ yes | ☐ no |
| 2.) Were the requested methods used? | ☒ yes | ☐ no |
| 3.) Trip blank submitted? | ☒ yes | ☐ no |
| 4.) Field blank submitted? | ☐ yes | ☒ no |

Timing

- | | | | |
|--|---|-----------------------------|--|
| 5.) Samples extracted within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 6.) Analysis performed within holding times? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Quality Assurance/Quality Control

- | | | | |
|--|---|--|--|
| 7.) Are the required reporting limits reported? (MRLs vs MDLs/PQLs) | ☒ yes | ☐ no | |
| 8.) Are all reported values above either MRL or MDL? | ☒ yes | ☐ no | |
| 9.) Are all values between the MDL & PQL tagged as trace? | ☐ yes | ☐ no | ☒ NA |
| 10a.) Are reporting limits raised for other reason besides high analyte conc.? | ☐ yes | ☒ no | |
| 10b.) If so, are they footnoted? | ☐ yes | ☐ no | ☒ NA |
| 11.) Lab method blank completed? | ☒ yes | ☐ no | |
| 12.) Lab, Field, or Trip Blank(s) report detections? | ☐ yes | ☒ no | |
| If yes, indicate blank type, chemical(s) and concentration(s): | | | |
| 13.) For inorganics and metals, is there one method blank for each analyte? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 14.) For VOCs, is there one method blank for each day of analysis? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |
| 15.) For SVOC's, is there one method blank for each extraction batch? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | |

Accuracy

- | | | | |
|--|---|-----------------------------|--|
| 16.) Is there a surrogate spike recovery for all VOC & SVOC samples? | ☒ yes | ☐ no | ☐ NA |
| Do all surrogate spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 17.) Is there a spike recovery for all Laboratory Control Samples? | ☒ yes | ☐ no | ☐ NA |
| Do all LCS/LCSD spike recoveries meet accepted criteria? | ☒ yes | ☐ no | |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 18.) Are all LCS/LCSD RPDs within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

Precision

- | | | | |
|---|---|-----------------------------|--|
| 19.) Are all matrix spike/matrix spike duplicate recoveries within acceptable limits? | ☒ yes | ☐ no | ☐ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |
| 20.) Are all matrix spike/matrix spike duplicate RPDs within acceptable limits? | ☐ yes | ☐ no | ☒ NA |
| If not, are all discrepancies footnoted? | ☐ yes | ☐ no | ☒ NA |

21.) Do all RPD calculations for Field Duplicates meet accepted criteria?

☒yes ☐no ☐NA

Comments:

The 8260D calibration verification failed the acceptance criteria for several analytes. The data were flagged accordingly. (ca)

Initial Review By: AR

Final Review By: _____

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.

5500 4th Ave South
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office@friedmanandbruya.com
www.friedmanandbruya.com

February 21, 2024

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on February 14, 2024 from the 160-02001-08, F&BI 402190 project. There are 13 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0221R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 14, 2024 by Friedman & Bruya, Inc. from the Evren Northwest 160-02001-08, F&BI 402190 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
402190 -01	MW12-IL-GW-240213
402190 -02	MW12-IUM-GW-240213
402190 -03	MW13-IUM-GW-240213
402190 -04	MW15-IUM-GW-240213
402190 -05	MW16-IL-GW-240213
402190 -06	MW16-IUM-GW-240213
402190 -07	MW21-IUM-GW-240213
402190 -08	Trip Blank

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW12-IL-GW-240213	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-01
Date Analyzed:	02/16/24	Data File:	021616.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	107	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW12-IUM-GW-240213	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-02
Date Analyzed:	02/16/24	Data File:	021617.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	106	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	6.9
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW13-IUM-GW-240213	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-03
Date Analyzed:	02/16/24	Data File:	021627.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	112	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	38
1,2,3-Trichloropropane	2.5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW15-IUM-GW-240213	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-04
Date Analyzed:	02/16/24	Data File:	021626.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	17
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW16-IL-GW-240213	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-05
Date Analyzed:	02/16/24	Data File:	021618.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	71	132
Toluene-d8	91	68	139
4-Bromofluorobenzene	106	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW16-IUM-GW-240213	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-06
Date Analyzed:	02/16/24	Data File:	021619.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	65
1,2,3-Trichloropropane	2.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW21-IUM-GW-240213	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-07
Date Analyzed:	02/16/24	Data File:	021620.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Trip Blank	Client:	Evren Northwest
Date Received:	02/14/24	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	402190-08
Date Analyzed:	02/16/24	Data File:	021615.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1 ca	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5 ca
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1 ca
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	160-02001-08, F&BI 402190
Date Extracted:	02/16/24	Lab ID:	04-0443 mb
Date Analyzed:	02/16/24	Data File:	021608.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	71	132
Toluene-d8	99	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1 ca	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5 ca
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1 ca
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/21/24

Date Received: 02/14/24

Project: 160-02001-08, F&BI 402190

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402224-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	<1	82	84	27-164	2
Chloromethane	ug/L (ppb)	10	<10	92	90	34-141	2
Vinyl chloride	ug/L (ppb)	10	<0.02	92	100	16-176	8
Bromomethane	ug/L (ppb)	10	<5	95	87	10-193	9
Chloroethane	ug/L (ppb)	10	<1	97	98	50-150	1
Trichlorofluoromethane	ug/L (ppb)	10	<1	86	93	50-150	8
Acetone	ug/L (ppb)	50	<50	43	50	15-179	15
1,1-Dichloroethene	ug/L (ppb)	10	<1	94	95	50-150	1
Hexane	ug/L (ppb)	10	<5	95	108	49-161	13
Methylene chloride	ug/L (ppb)	10	<5	91	90	40-143	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	94	94	50-150	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	96	50-150	1
1,1-Dichloroethane	ug/L (ppb)	10	<1	95	95	50-150	0
2,2-Dichloropropane	ug/L (ppb)	10	<1	91	90	62-152	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	97	97	50-150	0
Chloroform	ug/L (ppb)	10	<1	91	92	50-150	1
2-Butanone (MEK)	ug/L (ppb)	50	<20	72	71	34-168	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	88	89	50-150	1
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	92	93	50-150	1
1,1-Dichloropropene	ug/L (ppb)	10	<1	92	93	50-150	1
Carbon tetrachloride	ug/L (ppb)	10	<0.5	95	95	50-150	0
Benzene	ug/L (ppb)	10	<0.35	96	97	50-150	1
Trichloroethene	ug/L (ppb)	10	<0.5	92	92	43-133	0
1,2-Dichloropropane	ug/L (ppb)	10	<1	92	91	50-150	1
Bromodichloromethane	ug/L (ppb)	10	<0.5	89	92	50-150	3
Dibromomethane	ug/L (ppb)	10	<1	91	91	50-150	0
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	93	95	50-150	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	90	92	48-145	2
Toluene	ug/L (ppb)	10	<1	105	107	50-150	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	95	97	37-152	2
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	104	105	50-150	1
2-Hexanone	ug/L (ppb)	50	<10	96	98	50-150	2
1,3-Dichloropropane	ug/L (ppb)	10	<1	102	101	50-150	1
Tetrachloroethene	ug/L (ppb)	10	<1	101	102	50-150	1
Dibromochloromethane	ug/L (ppb)	10	<0.5	96	95	33-164	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	102	103	50-150	1
Chlorobenzene	ug/L (ppb)	10	<1	101	103	50-150	2
Ethylbenzene	ug/L (ppb)	10	<1	105	106	50-150	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	101	100	50-150	1
m,p-Xylene	ug/L (ppb)	20	<2	105	105	50-150	0
o-Xylene	ug/L (ppb)	10	<1	102	103	50-150	1
Styrene	ug/L (ppb)	10	<1	101	102	50-150	1
Isopropylbenzene	ug/L (ppb)	10	<1	95	97	50-150	2
Bromoform	ug/L (ppb)	10	<5	91	94	23-161	3
n-Propylbenzene	ug/L (ppb)	10	<1	107	105	50-150	2
Bromobenzene	ug/L (ppb)	10	<1	104	101	50-150	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	103	101	50-150	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	117	114	57-162	3
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	109	108	33-151	1
2-Chlorotoluene	ug/L (ppb)	10	<1	107	106	50-150	1
4-Chlorotoluene	ug/L (ppb)	10	<1	105	104	50-150	1
tert-Butylbenzene	ug/L (ppb)	10	<1	103	100	50-150	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	101	101	50-150	0
sec-Butylbenzene	ug/L (ppb)	10	<1	101	99	46-139	2
p-Isopropyltoluene	ug/L (ppb)	10	<1	101	99	46-140	2
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	100	99	50-150	1
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	100	102	50-150	2
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	99	98	50-150	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	97	96	50-150	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	84	85	50-150	1
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	85	84	42-150	1
Naphthalene	ug/L (ppb)	10	<1	90	91	50-150	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	80	80	44-155	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/21/24

Date Received: 02/14/24

Project: 160-02001-08, F&BI 402190

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCS/D	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	93	86	49-149	8
Chloromethane	ug/L (ppb)	10	96	87	34-143	10
Vinyl chloride	ug/L (ppb)	10	112	103	43-149	8
Bromomethane	ug/L (ppb)	10	119	100	28-182	17
Chloroethane	ug/L (ppb)	10	104	96	59-157	8
Trichlorofluoromethane	ug/L (ppb)	10	98	96	59-141	2
Acetone	ug/L (ppb)	50	47	43	20-139	9
1,1-Dichloroethene	ug/L (ppb)	10	100	91	67-138	9
Hexane	ug/L (ppb)	10	106	105	50-161	1
Methylene chloride	ug/L (ppb)	10	93	87	29-192	7
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	102	94	70-130	8
trans-1,2-Dichloroethene	ug/L (ppb)	10	103	93	70-130	10
1,1-Dichloroethane	ug/L (ppb)	10	102	93	70-130	9
2,2-Dichloropropane	ug/L (ppb)	10	117	107	71-148	9
cis-1,2-Dichloroethene	ug/L (ppb)	10	104	94	70-130	10
Chloroform	ug/L (ppb)	10	99	89	70-130	11
2-Butanone (MEK)	ug/L (ppb)	50	77	72	50-157	7
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	96	90	70-130	6
1,1,1-Trichloroethane	ug/L (ppb)	10	100	94	70-130	6
1,1-Dichloropropene	ug/L (ppb)	10	99	91	70-130	8
Carbon tetrachloride	ug/L (ppb)	10	103	97	70-130	6
Benzene	ug/L (ppb)	10	102	91	70-130	11
Trichloroethene	ug/L (ppb)	10	99	89	70-130	11
1,2-Dichloropropane	ug/L (ppb)	10	97	87	70-130	11
Bromodichloromethane	ug/L (ppb)	10	97	90	70-130	7
Dibromomethane	ug/L (ppb)	10	95	88	70-130	8
4-Methyl-2-pentanone	ug/L (ppb)	50	93	89	70-130	4
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	91	70-130	9
Toluene	ug/L (ppb)	10	105	105	70-130	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	98	96	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	100	102	70-130	2
2-Hexanone	ug/L (ppb)	50	90	93	66-132	3
1,3-Dichloropropene	ug/L (ppb)	10	97	98	70-130	1
Tetrachloroethene	ug/L (ppb)	10	102	104	70-130	2
Dibromochloromethane	ug/L (ppb)	10	96	93	63-142	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	99	99	70-130	0
Chlorobenzene	ug/L (ppb)	10	99	97	70-130	2
Ethylbenzene	ug/L (ppb)	10	103	102	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	99	99	70-130	0
m,p-Xylene	ug/L (ppb)	20	103	101	70-130	2
o-Xylene	ug/L (ppb)	10	101	99	70-130	2
Styrene	ug/L (ppb)	10	99	95	70-130	4
Isopropylbenzene	ug/L (ppb)	10	96	95	70-130	1
Bromoform	ug/L (ppb)	10	94	93	50-157	1
n-Propylbenzene	ug/L (ppb)	10	106	98	70-130	8
Bromobenzene	ug/L (ppb)	10	102	96	70-130	6
1,3,5-Trimethylbenzene	ug/L (ppb)	10	105	97	52-150	8
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	111	105	75-140	6
1,2,3-Trichloropropane	ug/L (ppb)	10	106	102	40-153	4
2-Chlorotoluene	ug/L (ppb)	10	105	97	70-130	8
4-Chlorotoluene	ug/L (ppb)	10	104	99	70-130	5
tert-Butylbenzene	ug/L (ppb)	10	102	95	70-130	7
1,2,4-Trimethylbenzene	ug/L (ppb)	10	102	95	70-130	7
sec-Butylbenzene	ug/L (ppb)	10	102	95	70-130	7
p-Isopropyltoluene	ug/L (ppb)	10	102	93	70-130	9
1,3-Dichlorobenzene	ug/L (ppb)	10	101	94	70-130	7
1,4-Dichlorobenzene	ug/L (ppb)	10	101	96	70-130	5
1,2-Dichlorobenzene	ug/L (ppb)	10	101	92	70-130	9
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	96	89	70-130	8
1,2,4-Trichlorobenzene	ug/L (ppb)	10	87	78	70-130	11
Hexachlorobutadiene	ug/L (ppb)	10	89	78	70-130	13
Naphthalene	ug/L (ppb)	10	88	80	61-133	10
1,2,3-Trichlorobenzene	ug/L (ppb)	10	80	72	69-143	11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

402190

Report TO Lynn Green

Company EVREN-NW

Address 40 SE 24th Ave

City, State, ZIP Portland, Oregon 97214

Phone 503-452-5561 Email lynn@g-evren-nw.com

SAMPLE CHAIN OF CUSTODY

02/14/24

vw2

Page # of

SAMPLERS (signature)

PROJECT NAME

160-022261-08

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
 Standard Turnaround
 RUSH
 Rush charges authorized by:
 SAMPLE DISPOSAL
 Dispose after 30 days
 Archive Samples
 Other

Project Specific RIs - Yes / No

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Notes
MW12-IL-GW-240213	01 A-C	02-13-24	11:05	GW	3						X	1,2-DCP 1,2,3-TCF
MW12-IL-GW-240213	02	02-13-24	11:35	GW	3						X	
MW13-IL-GW-240213	03	02-13-24	12:14	GW	3						X	
MW15-IL-GW-240213	04	02-13-24	12:25	GW	3						X	
MW16-IL-GW-240213	05	02-13-24	13:29	GW	3						X	
MW16-IL-GW-240213	06	02-13-24	13:09	GW	3						X	
MW21-IL-GW-240213	07	02-13-24	13:53	GW	3						X	
Trip Blank	08 A-B	02-13-24	-	-	2				X			
												Samples received at 3 °C

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Relinquished by:

Jordan Morris

Jordan Morris

Evan Northwest

02-13-24

18:00

Received by:

AN HPHAN

AN HPHAN

ES 3

02/14/24

10:18

Relinquished by:

Received by:

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.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 22, 2024

Lynn Green, Project Manager
Evren Northwest, Inc.
PO Box 14488
Portland, OR 97293

Dear Mr Green:

Included are the results from the testing of material submitted on February 15, 2024 from the 160-02001-08, F&BI 402211 project. There are 15 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures

c: Neil Woller, Paul Trone, Evan Bruggeman
ENW0222R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 15, 2024 by Friedman & Bruya, Inc. from the Evren Northwest 160-02001-08, F&BI 402211 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Evren Northwest</u>
402211 -01	MW14-IUM-GW-240214
402211 -02	MW17-D-GW-240214
402211 -03	MW17-IUM-GW-240214
402211 -04	MW18-IL-GW-240214
402211 -05	MW18-IUM-GW-240214
402211 -06	MW19-D-GW-240214
402211 -07	MW19-IUM-GW-240214
402211 -08	MW20-IUM-GW-240214
402211 -09	MWFD-GW-240214
402211 -10	Trip Blank

The 8260D calibration verification failed the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW14-IUM-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-01
Date Analyzed:	02/19/24	Data File:	021930.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	109	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	140
1,2,3-Trichloropropane	12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW17-D-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-02
Date Analyzed:	02/19/24	Data File:	021922.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	113	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW17-IUM-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-03
Date Analyzed:	02/19/24	Data File:	021923.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	112	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW18-IL-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-04
Date Analyzed:	02/19/24	Data File:	021924.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	71	132
Toluene-d8	94	68	139
4-Bromofluorobenzene	113	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW18-IUM-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-05
Date Analyzed:	02/19/24	Data File:	021927.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	91	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW19-D-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-06
Date Analyzed:	02/19/24	Data File:	021925.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	113	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW19-IUM-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-07
Date Analyzed:	02/19/24	Data File:	021928.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	71	132
Toluene-d8	104	68	139
4-Bromofluorobenzene	109	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	77
1,2,3-Trichloropropane	4.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW20-IUM-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-08
Date Analyzed:	02/19/24	Data File:	021926.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	91	68	139
4-Bromofluorobenzene	105	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MWFD-GW-240214	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-09
Date Analyzed:	02/19/24	Data File:	021929.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	71	132
Toluene-d8	91	68	139
4-Bromofluorobenzene	111	62	136

Compounds:	Concentration ug/L (ppb)
1,2-Dichloropropane	<1
1,2,3-Trichloropropane	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Trip Blank	Client:	Evren Northwest
Date Received:	02/15/24	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	402211-10
Date Analyzed:	02/19/24	Data File:	021921.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	96	68	139
4-Bromofluorobenzene	111	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10 ca	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1 ca	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1 ca
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Evren Northwest
Date Received:	Not Applicable	Project:	160-02001-08, F&BI 402211
Date Extracted:	02/19/24	Lab ID:	04-0447 mb
Date Analyzed:	02/19/24	Data File:	021908.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	71	132
Toluene-d8	94	68	139
4-Bromofluorobenzene	116	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1 ca	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2 ca	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1 ca
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/22/24

Date Received: 02/15/24

Project: 160-02001-08, F&BI 402211

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402211-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	84	27-164
Chloromethane	ug/L (ppb)	10	<10	66	34-141
Vinyl chloride	ug/L (ppb)	10	0.036	101	16-176
Bromomethane	ug/L (ppb)	10	<5	90	10-193
Chloroethane	ug/L (ppb)	10	<1	92	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	84	50-150
Acetone	ug/L (ppb)	50	<50	50	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	91	50-150
Hexane	ug/L (ppb)	10	<5	91	49-161
Methylene chloride	ug/L (ppb)	10	<5	87	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	94	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	95	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	96	62-152
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
Chloroform	ug/L (ppb)	10	<1	92	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	71	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	94	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	90	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	98	50-150
Benzene	ug/L (ppb)	10	<0.35	93	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	91	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	88	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	90	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	89	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	88	48-145
Toluene	ug/L (ppb)	10	<1	102	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	94	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	102	50-150
2-Hexanone	ug/L (ppb)	50	<10	97	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	97	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	100	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	95	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	102	50-150
Chlorobenzene	ug/L (ppb)	10	<1	98	50-150
Ethylbenzene	ug/L (ppb)	10	<1	103	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	100	50-150
m,p-Xylene	ug/L (ppb)	20	<2	102	50-150
o-Xylene	ug/L (ppb)	10	<1	99	50-150
Styrene	ug/L (ppb)	10	<1	98	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	94	50-150
Bromoform	ug/L (ppb)	10	<5	94	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	100	50-150
Bromobenzene	ug/L (ppb)	10	<1	99	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	97	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	109	57-162
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	106	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	95	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	93	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	94	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	96	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	96	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	95	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	79	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	81	42-150
Naphthalene	ug/L (ppb)	10	<1	87	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	77	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/22/24

Date Received: 02/15/24

Project: 160-02001-08, F&BI 402211

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCS/D	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	90	77	49-149	16
Chloromethane	ug/L (ppb)	10	95	83	34-143	13
Vinyl chloride	ug/L (ppb)	10	113	97	43-149	15
Bromomethane	ug/L (ppb)	10	118	103	28-182	14
Chloroethane	ug/L (ppb)	10	106	92	59-157	14
Trichlorofluoromethane	ug/L (ppb)	10	100	83	59-141	19
Acetone	ug/L (ppb)	50	44	45	20-139	2
1,1-Dichloroethene	ug/L (ppb)	10	100	89	67-138	12
Hexane	ug/L (ppb)	10	93	90	50-161	3
Methylene chloride	ug/L (ppb)	10	99	83	29-192	18
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	102	90	70-130	12
trans-1,2-Dichloroethene	ug/L (ppb)	10	101	89	70-130	13
1,1-Dichloroethane	ug/L (ppb)	10	102	88	70-130	15
2,2-Dichloropropane	ug/L (ppb)	10	103	94	71-148	9
cis-1,2-Dichloroethene	ug/L (ppb)	10	103	91	70-130	12
Chloroform	ug/L (ppb)	10	96	86	70-130	11
2-Butanone (MEK)	ug/L (ppb)	50	79	70	50-157	12
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	81	70-130	15
1,1,1-Trichloroethane	ug/L (ppb)	10	99	87	70-130	13
1,1-Dichloropropene	ug/L (ppb)	10	97	88	70-130	10
Carbon tetrachloride	ug/L (ppb)	10	101	91	70-130	10
Benzene	ug/L (ppb)	10	103	91	70-130	12
Trichloroethene	ug/L (ppb)	10	97	85	70-130	13
1,2-Dichloropropane	ug/L (ppb)	10	101	86	70-130	16
Bromodichloromethane	ug/L (ppb)	10	99	84	70-130	16
Dibromomethane	ug/L (ppb)	10	98	86	70-130	13
4-Methyl-2-pentanone	ug/L (ppb)	50	97	85	70-130	13
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	89	70-130	12
Toluene	ug/L (ppb)	10	103	99	70-130	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	98	94	70-130	4
1,1,2-Trichloroethane	ug/L (ppb)	10	102	98	70-130	4
2-Hexanone	ug/L (ppb)	50	84	83	66-132	1
1,3-Dichloropropene	ug/L (ppb)	10	99	96	70-130	3
Tetrachloroethene	ug/L (ppb)	10	96	93	70-130	3
Dibromochloromethane	ug/L (ppb)	10	94	89	63-142	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	99	96	70-130	3
Chlorobenzene	ug/L (ppb)	10	98	95	70-130	3
Ethylbenzene	ug/L (ppb)	10	103	99	70-130	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	98	93	70-130	5
m,p-Xylene	ug/L (ppb)	20	102	99	70-130	3
o-Xylene	ug/L (ppb)	10	99	96	70-130	3
Styrene	ug/L (ppb)	10	99	95	70-130	4
Isopropylbenzene	ug/L (ppb)	10	92	92	70-130	0
Bromoform	ug/L (ppb)	10	96	91	50-157	5
n-Propylbenzene	ug/L (ppb)	10	100	99	70-130	1
Bromobenzene	ug/L (ppb)	10	98	97	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	96	96	52-150	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	111	107	75-140	4
1,2,3-Trichloropropane	ug/L (ppb)	10	104	100	40-153	4
2-Chlorotoluene	ug/L (ppb)	10	102	98	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	100	98	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	94	94	70-130	0
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	94	70-130	1
sec-Butylbenzene	ug/L (ppb)	10	93	93	70-130	0
p-Isopropyltoluene	ug/L (ppb)	10	90	93	70-130	3
1,3-Dichlorobenzene	ug/L (ppb)	10	94	93	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	96	93	70-130	3
1,2-Dichlorobenzene	ug/L (ppb)	10	94	93	70-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	94	88	70-130	7
1,2,4-Trichlorobenzene	ug/L (ppb)	10	80	79	70-130	1
Hexachlorobutadiene	ug/L (ppb)	10	77	77	70-130	0
Naphthalene	ug/L (ppb)	10	88	84	61-133	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	74	75	69-143	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

402211

Report To Lynn Green
 Company EVREN-NW
 Address 40 SE 24th Ave
 City, State, ZIP Portland, Oregon 97214
 Phone 503-452-5551 Email lynn@g-evren-nw.com

SAMPLE CHAIN OF CUSTODY

02/15/24

vw4

SAMPLERS (signature)		Page # 1 of 1	
PROJECT NAME	160-0201-00	PO #	
REMARKS		INVOICE TO	
Project Specific RLS - Yes / No		TURNAROUND TIME ☒ Standard Turnaround ☐ RUSH Rush charges authorized by: _____ SAMPLE DISPOSAL Dispose after 30 days Archive Samples Other _____	

ANALYSES REQUESTED													
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Notes	
MW14-IVM-GW-240214	01A	02-14-24	13:04	GW	3							X	Time 12:43
MW17-D-GW-240214	02	02-14-24	10:31	GW	3							X	
MW17-IVM-GW-240214	03	02-14-24	10:24	GW	3							X	
MW18-IL-GW-240214	04	02-14-24	11:28	GW	3							X	
MW18-IVM-GW-240214	05	02-14-24	11:45	GW	3							X	
MW19-D-GW-240214	06	02-14-24	12:24	GW	3							X	
MW19-IVM-GW-240214	07	02-14-24	12:03	GW	3							X	Time 13:06
MW20-IVM-GW-240214	08	02-14-24	13:04	GW	3							X	
MWFD-GW-240214	09	02-14-24	8:00	GW	3							X	
Trip Blank	10 AB	02-14-24	—	Water	2				X				

SIGNATURE		PRINT NAME		COMPANY		DATE	TIME
Reinquished by: <i>[Signature]</i>		T. Jordan Morris		Evan Hoffmeyer		02-14-24	18:00
Received by: <i>[Signature]</i>		Phan Phan		Feb 1		2/15/24	10:25
Reinquished by:				Samples received		4	
Received by:							

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282

Appendix D

Trend Charts

Chart D1

DCP and TCP Concentration vs. Ground Water Elevation Over Time in MW14-I_{UM} and MW16-I_{UM}

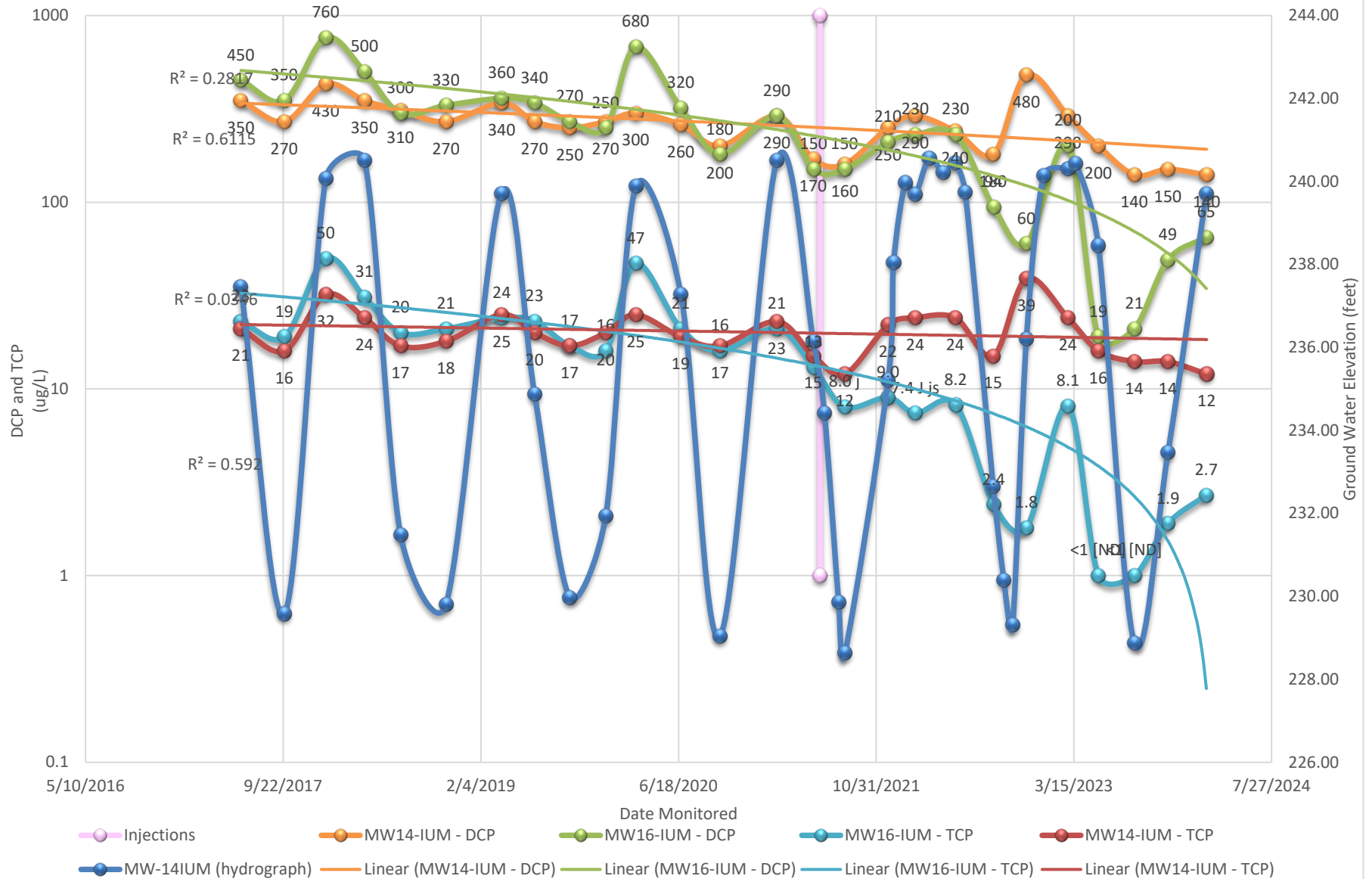


Chart D2
MW14-I_{UM} and MW16-I_{UM}
ORP and DO vs Time

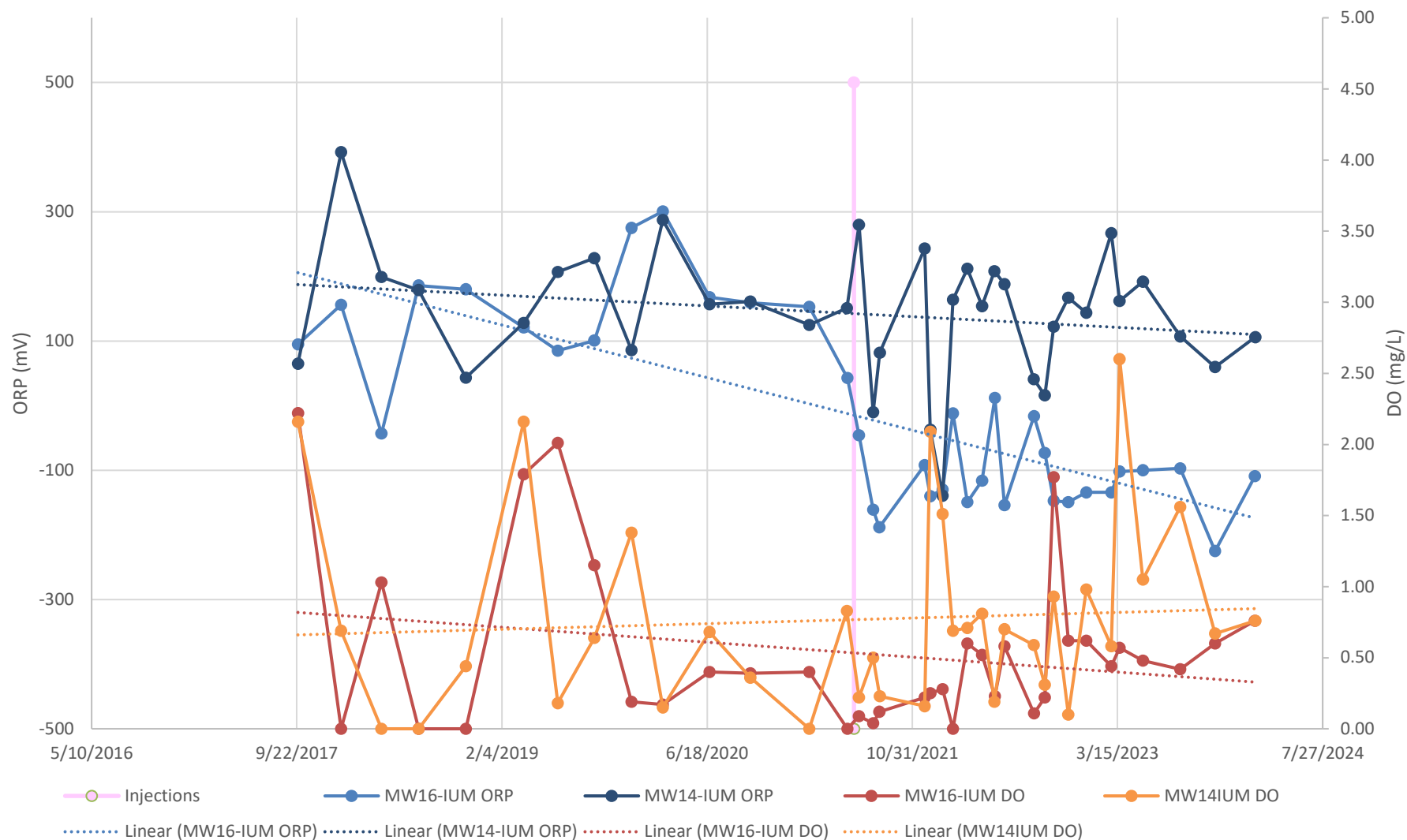


Chart D3
DCP and TCP Concentration Trends in MW12-I_{UM}

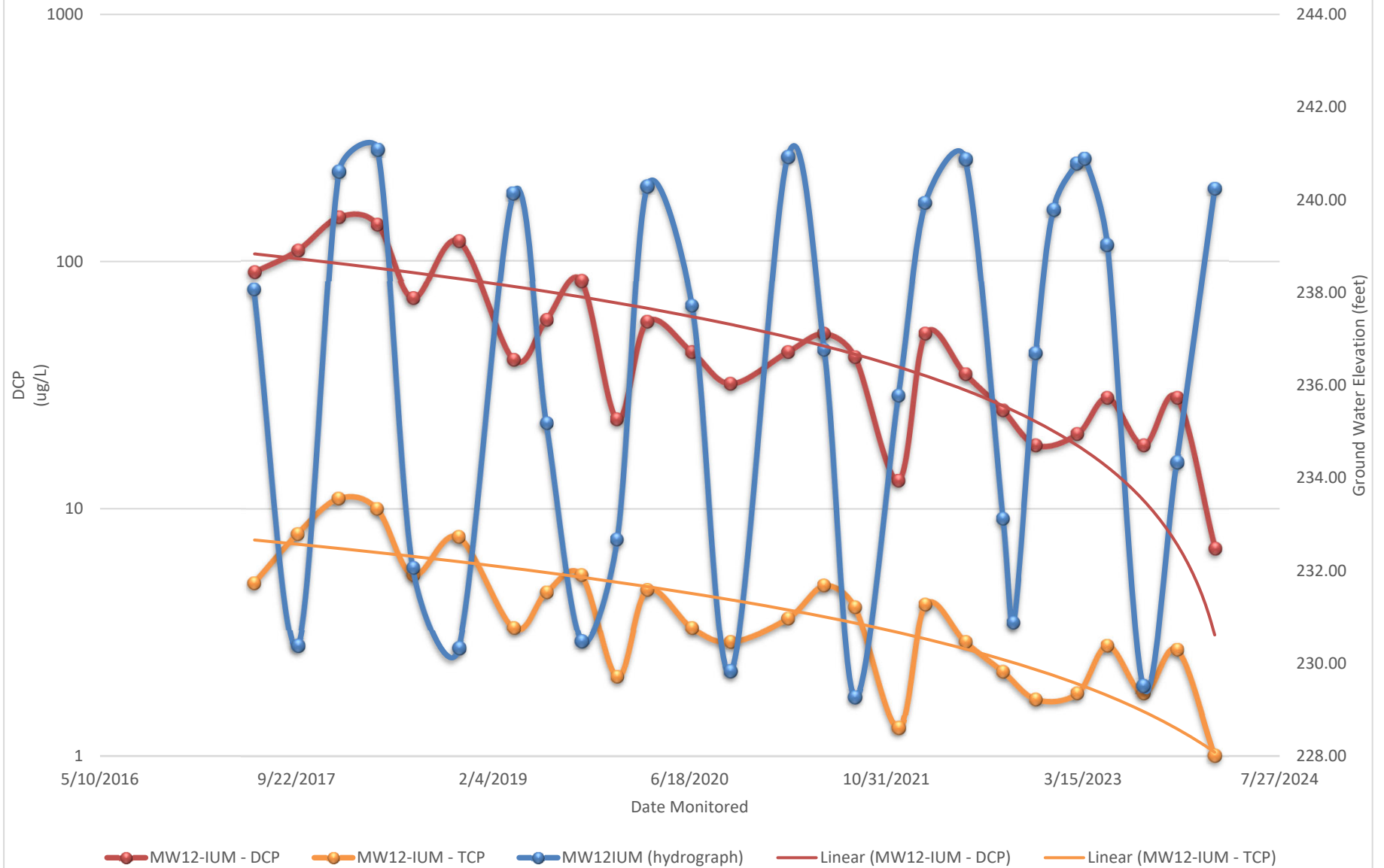


Chart D4
DCP and TCP Concentration Trends in MW13-I_{UM}



Chart D5
DCP and TCP Concentration Trends in MW15-I_{UM}

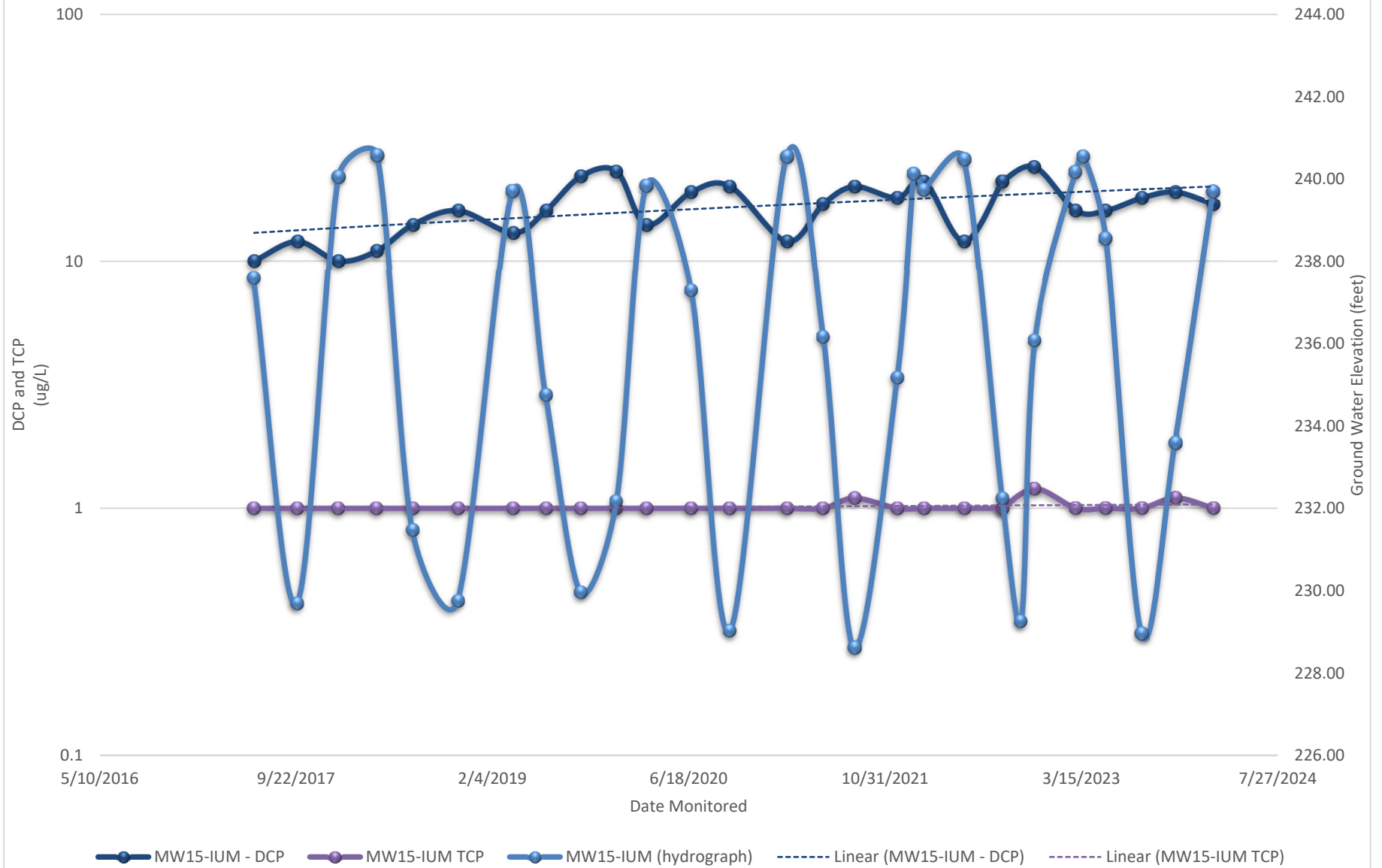


Chart D6
TCP and/or DCP Concentration Trends in Down-Gradient Wells MW18-I_{UM} and MW19-I_{UM}

