AECOM

Groundwater Monitoring Work Plan

Former Chevron Station 97502
640 Metcalf Street
Sedro-Woolley, Washington 98284
FSID: 61112475
CSID: 6368

Project number: 60742607

April 28, 2025

Chevron Environmental Management Company
5001 Executive Parkway, Suite 200
San Ramon, CA 94583

Delivering a better world

Quality information

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Acronyms and Abbreviations

Arcadis	Arcadis U.S., Inc.
bgs	below ground surface
CEMC	Chevron Environmental Management Company
City	City of Sedro-Woolley
COC	contaminant of concern
CRA	Conestoga-Rovers and Associates
CSM	conceptual site model
Draft FS Report	Draft for Agency Review – Feasibility Study Report
Draft Work Plan	Draft Groundwater Monitoring Work Plan
Ecology	Washington State Department of Ecology
Ecology Guidance	Guidance on Remediation of Petroleum-Contaminated Groundwater by Natural Attenuation (Publication No. 05-09-091)
MNA	monitored natural attenuation
MTCA	Model Toxics Control Act
No.	Number
property	Former Chevron Station 97502 located at 640 Metcalf Street in Sedro-Woolley, Washington (Skagit County Tax Parcel Identifications 77454, 77455, and 77456)
site	property and surrounding right-of-way areas
USEPA	United States Environmental Protection Agency
UST	underground storage tank
Work Plan	Groundwater Monitoring Work Plan

1. Introduction

On behalf of Chevron Environmental Management Company (CEMC), AECOM has prepared this *Groundwater Monitoring Work Plan* (Work Plan) for Former Chevron Station 97502, located at 640 Metcalf Street in Sedro-Woolley, Washington and surrounding right-of-way areas (site; Figure 1). This Work Plan is based on the *Draft Groundwater Monitoring Work Plan* (Draft Work Plan) prepared by Arcadis U.S., Inc. (Arcadis) and dated November 5, 2024 (Arcadis 2024a). Since submission of the Draft Work Plan, AECOM took over as CEMC's environmental consultant for the site. AECOM received Washington State Department of Ecology's (Ecology's) comments on the Draft Work Plan via email on January 30, 2025, and this Work Plan was revised based on these comments.

The site, as defined by the Model Toxics Control Act (MTCA), is an area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, placed, or otherwise come to be located. The site is defined in Agreed Order (AO) Number (No.) DE 18034 as the property (lots 77454, 77455, and 77456) and surrounding right-of-way areas (Ecology 2020). Potentially Liable Persons for the site are CEMC and the City of Sedro-Woolley (City). The property is currently owned by the City and is occupied by Hammer Heritage Square, a public city park (Arcadis 2024a). A site location map is presented on Figure 1, and a site plan is included as Figure 2. Site regulatory identifiers include Cleanup Site Identification No. 6368 and Facility Site Identification No. 61112475.

On May 30, 2024, Arcadis submitted a *Draft for Agency Review – Feasibility Study Report* (Draft FS Report) for the site to Ecology which identified and evaluated remedial action alternatives for site cleanup (Arcadis 2024b). Based on the potential receptors and exposure pathways for the contaminants of concern (COCs) remaining in soil and groundwater, monitored natural attenuation (MNA), coupled with institutional controls, was the recommended remedial alternative for site cleanup. Via email correspondence, Ecology provided comments on the Draft FS Report on September 16, 2024, with one comment noting that geochemical parameters should be collected to assess current attenuation processes prior to considering MNA as a viable remedial alternative for site cleanup.

The purpose of this Work Plan is to present a monitoring plan consistent with the requirements of Ecology's *Guidance on Remediation of Petroleum-Contaminated Groundwater by Natural Attenuation* (Publication No. 05-09-091) (Ecology Guidance; Ecology 2005) to assess the viability of long-term MNA as a remedial alternative for the site. This plan aims to meet the following objectives:

- Show that natural attenuation processes are occurring at the site by collecting and analyzing data to confirm these natural attenuation processes are reducing contaminant concentrations.
- Demonstrate that these natural attenuation processes will continue to occur at rates sufficient to achieve cleanup objectives within a reasonable timeframe.
- Ensure that the natural attenuation processes will be adequately protective of human health and the environment during the cleanup period. This evaluation includes demonstrating that there are no unacceptable risks to human health or the environment from the contaminants during the attenuation process.

1.1 Site Background

The property and surrounding area have been developed for commercial uses since at least the early 1900s. Historical ownership and land use of the property are described below, including known historical petroleum activities and/or spills.

The earliest known development of the property occurred in 1905 with the construction of the Seidell Building. Before it burned down in 1949, the Seidell Building was used for various commercial businesses, including a bank, lawyer's office, barber shop, tailor, and stores for sporting goods, liquor, and general retail (Ecology 2020).

The property was redeveloped as a service station around 1950, becoming the Gateway Service Station in 1953. In 1965, Standard Oil Company of California (predecessor to Chevron) acquired the Gateway Service Station property, remodeled, and took over operations (Ecology 2020).

On July 25, 1989, approximately 100 gallons of unleaded gasoline was spilled when an underground storage tank (UST) overflowed during filling. The spilled gasoline flowed south down the gutter along Metcalf Street to

Ferry Street and entered a catch basin at the northwestern corner of the intersection of Metcalf and Ferry streets. The gasoline was flushed from the stormwater drainage system on July 25 and 26, 1989 (Conestoga-Rovers & Associates [CRA] 2008).

Service station operations ended in early 1992, and all USTs and associated equipment were removed by February 1992. An estimated eight USTs were historically present at the service station, which included three gasoline USTs (one 3,000-gallon supreme-unleaded gasoline UST; one 6,500-gallon unleaded gasoline UST; and one 8,000-gallon leaded gasoline UST), as well as one 550-gallon heating-oil UST; one 550-gallon used-oil UST; and one 300-gallon kerosene UST. One 300-gallon UST and one 100-gallon UST were also removed; the contents were unknown (EMCON 1993). The service station also included two pump islands, two hydraulic hoists, and associated underground piping (Ecology 2020). The City purchased the lots that comprise the property in several transactions between 1997 and 2000 and constructed Hammer Heritage Square in 2005 (Ecology 2020).

Hammer Heritage Square is primarily paved with concrete pavers and includes a gazebo, planter and landscaped areas, public restrooms, and a clock tower. The park is the location of Sedro-Woolley Farmers Market and other community events (Ecology 2020). There are 17 site groundwater monitoring wells: 10 on-property and seven off-property.

1.2 Site Geology

Geology at the site consists of silt and sandy gravels to 20 feet below ground surface (bgs). Lithology observed at monitoring wells MW-9, MW-10, and MW-11 was generally consistent with historical findings. Silt was encountered at 5 to 5.5 feet bgs; silt and well-graded gravel was encountered at 10 and 15 feet bgs, and poorly and well-graded gravel was encountered at 18 to 20 feet bgs (Arcadis 2024a).

The topography at the site generally slopes to the east and southeast. The Yakima and Columbia Rivers intersect south-southeast of the site (Arcadis 2024a).

1.3 Site Hydrogeology

Groundwater monitoring began at the site in 1992 and continued until September 2014, when it was put on hold until 2020. The previous monitoring frequency was typically quarterly; however, multiple years only had semi-annual sampling (Arcadis 2024a).

- Monitoring network: 14 groundwater monitoring wells were originally installed at the site. Wells MW-1 through MW-5 were installed in February 1991, and MW-1 through MW-3 were decommissioned in 1992. Wells MW-6 through MW-9 were installed in October 1991. Well MW-9 was decommissioned in 2001. Wells MW-10 and MW-11 were installed in July 2002. Wells MW-12 through MW-14 were installed in May 2006. The remaining groundwater monitoring wells were regularly sampled until 2014. Seven additional wells (MW-15 through MW-21) were installed in September 2021 and quarterly groundwater sampling resumed at that time.
- Observed depth to water: Depth to water at the site averages between 6 and 16 feet bgs (Arcadis 2024a).
- Groundwater elevation: Groundwater elevation ranges from approximately 43 to 52 feet above mean sea level (Arcadis 2024a).
- Groundwater flow direction: Groundwater flow direction at the site is primarily toward the south-southwest and has varied from south-southeast to south-southwest (see rose diagram on Figure 3) (Arcadis 2024a).

The approximate monitoring well locations are shown on Figure 2. Historical groundwater gauging and sampling results are summarized in Table 1, and gauging results from December 2021 are depicted on Figure 3. The approximate extent of COCs in relation to MTCA Method A cleanup levels (CULs) for December 2021 is depicted on Figure 4 (Arcadis 2022).

2. Proposed Site Remedy

MNA is defined as the reliance on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a timeframe that is reasonable compared to that offered by other, more active methods. The natural attenuation processes include a

variety of physical, chemical, or biological processes that, under favorable conditions, act to reduce the mass, toxicity, mobility, volume, or concentration of COCs in groundwater. These in-situ processes include diffusion, dilution, sorption, biodegradation, volatilization, and chemical and/or biological stabilization, transformation, or destruction of COCs.

Natural attenuation processes are typically occurring at all sites, but to varying degrees of effectiveness depending on the types and concentrations of contaminants present, and the physical, chemical, and biological characteristics of the soil and groundwater.

2.1 MNA Assessment

Natural attenuation is the reduction in concentrations of COCs in groundwater over time due to naturally occurring physical, chemical, and biological processes. Natural attenuation processes include both destructive (e.g., biodegradation, abiotic degradation) and non-destructive (e.g., dispersion, dilution, adsorption, volatilization) processes. Destructive processes are generally preferred in support of natural attenuation because they transform potentially harmful COCs into innocuous end products. However, non-destructive processes may also play an important role in decreasing COC concentrations to levels that are acceptable.

The United States Environmental Protection Agency's (USEPA's) tiered lines of evidence approach (USEPA 1999) will be applied to evaluate the viability of MNA as a remedy at the site. The tiers of evidence for this approach include:

1. Historical groundwater data that demonstrate a clear and significant trend of decreasing contaminant mass and/or concentration over time at appropriate monitoring points;
2. Hydrogeologic and geochemical data that can be used to demonstrate indirectly the types of natural attenuation processes active at a site, and the rate at which such processes will reduce contaminant concentrations to required levels; and
3. Data from field studies that directly demonstrate the occurrence of particular natural attenuation processes at a site and their ability to degrade COCs.

The first tier of evidence is the most critical, as it indicates whether attenuation processes, acting together, result in the meaningful reduction of COCs in groundwater under site conditions. This line of evidence is established based on statistical analysis of concentration trends. The second tier of evidence is developed based on assessment of the groundwater geochemical conditions to ascertain which attenuation processes the environment is conducive to, and whether expected degradation products of specific reactions are observed. Rates at which attenuation processes are expected to reduce contaminant concentrations to required levels are assessed based on statistical trend analysis, as applicable. The third tier of evidence is not required in all cases, particularly when effective natural attenuation is firmly demonstrated based on the first two lines of evidence. If there is an initial lack of sufficient evidence under the first two tiers that MNA is proceeding as expected, then additional data may be collected to fulfill the third line of evidence.

The Ecology Guidance was also used to develop this preliminary MNA evaluation and will guide implementation and assessment. This guidance stipulates evaluation of the following five factors:

1. Demonstration that, prior to relying solely on natural attenuation to achieve cleanup standards, the groundwater plume is stable or shrinking;
2. Demonstration that destructive mechanisms of natural attenuation (i.e., chemical or biological degradation) are occurring and are substantial contributors to contaminant reductions observed at the site;
3. Demonstration that the estimated restoration timeframe by natural attenuation is reasonable;
4. Demonstration that natural attenuation is protective of human health and the environment during the restoration time frame; and
5. Demonstration that source control is achieved to the maximum extent practicable.

This preliminary MNA evaluation is aimed at demonstrating the stability of COCs in groundwater and understanding the contributing attenuation mechanisms at the site. The results from geochemical parameter sampling provide a line of evidence that natural attenuation is supported by destructive biodegradation. Source control is achieved based on removal of the primary sources (USTs and other service station infrastructure) and absence of any significant remaining secondary source material.

3. Monitoring Plan

The following section details the proposed monitoring plan to evaluate the processes of natural attenuation in site groundwater. A Sampling and Analysis Plan is included as Table 2.

3.1 Baseline Groundwater Monitoring

Baseline groundwater monitoring will be conducted in the first year. The entire remaining site monitoring well network (MW-4 through MW-8 and MW-10 through MW-21) will continue to be gauged and sampled quarterly with laboratory analysis/field measurement for site COCs and primary geochemical parameters. Secondary geochemical parameters (defined in Table 2) will also be analyzed during this period to evaluate natural attenuation processes at a select number of wells, including the following:

- Upgradient well: MW-6;
- Source area wells: MW-7, MW-8, MW-13, and MW-17;
- Impacted center-line plume wells: MW-10, MW-11, and MW-14;
- Crossgradient wells: MW-12 and MW-18; and
- Downgradient sentinel well: MW-19.

3.2 Groundwater Performance Monitoring

Following four quarters of baseline groundwater monitoring, provided that the plume is determined to be shrinking or stable during the first year and quarterly monitoring indicates semi-annual monitoring will provide sufficient data, performance monitoring will then be conducted on a semi-annual basis for 2 years. Following 2 years of semi-annual performance monitoring, and provided that the plume is determined to be shrinking or stable during the first 3 years and semi-annual monitoring indicates annual monitoring will provide sufficient data, the frequency of monitoring may be reduced to an annual basis for subsequent years.

During the performance monitoring phase, the entire site monitoring well network will be gauged and sampled. Laboratory analysis/field measurement for site COCs and primary geochemical parameters will continue for the entire site monitoring well network. Secondary geochemical parameters will also be analyzed during this period to evaluate natural attenuation processes at a select number of wells, including the following:

- Upgradient well: MW-6;
- Source area wells: MW-7, MW-8, MW-13, and MW-17;
- Impacted center-line plume wells: MW-10, MW-11, and MW-14; and
- Downgradient sentinel well: MW-19.

Following the first year of baseline groundwater monitoring and 4 years of performance monitoring, if it is concluded that the monitoring well network may be reduced and still provide sufficient data to demonstrate MNA is occurring at the site, a request to reduce the number of sampled monitoring wells may be submitted to Ecology.

3.3 Groundwater Sampling Methodology

Each well will be gauged and sampled using low-flow methodology with a peristaltic pump. Primary geochemical parameters including pH, temperature, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential will be measured during the purging process with a YSI multiparameter water quality meter (or equivalent) and flow-through cell. Prior to collecting samples, field parameters will be allowed to stabilize in accordance with the USEPA 2017 Low Stress Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells (USEPA 2017). Further details regarding the field procedures and stabilization criteria are included in the monitoring well sampling standard operating procedure attached as Appendix A.

3.4 Investigation-Derived Waste

Purge water generated during groundwater monitoring activities will be transported off-site for proper disposal.

4. Contingency Plan

Ecology guidance recommends the development of a site-specific contingency plan that describes monitoring results that would trigger additional action. Triggers for the site would include:

- Evidence of increased contaminant concentrations within the plume;
- Evidence of plume expansion or plume migration to a sentinel well;
- Evidence of new or renewed releases of contaminants;
- Evidence that biodegradation is not occurring; or
- Evidence that contaminant concentrations are not decreasing at a sufficiently rapid rate to achieve cleanup standards within the acceptable restoration time frame.

This contingency plan includes tiered contingent actions dependent on the trigger condition.

In the cases that evidence of statistically increasing concentration trends are observed within the plume, evidence of plume expansion or migration to a sentinel well, and/or evidence of a new or renewed release of contaminants is discovered, the following contingency actions may be implemented:

- Modify the performance monitoring plan to provide for additional wells and/or more frequent sampling or additional parameters to enhance the ability to evaluate the progress of natural attenuation and any potential threats posed to receptors;
- If data gaps are identified following modifications of the performance monitoring plan, conduct additional site investigation to re-evaluate the conceptual site model (CSM); and
- Based on the results of additional site investigation and updated CSM, the selected site remedy may be re-evaluated at that time if warranted.

If, following 1 year of baseline monitoring and 4 years of performance monitoring, evidence suggests that biodegradation is not occurring and/or contaminant concentrations are not decreasing at a sufficiently rapid rate to achieve cleanup standards within an acceptable restoration time frame, the following contingency actions may be implemented:

- Modify the performance monitoring plan to provide for additional wells and/or more frequent sampling or additional parameters to enhance the ability to evaluate the progress of natural attenuation and any potential threats posed to receptors; and
- Following modifications of the performance monitoring plan, if evidence remains that biodegradation is not occurring and/or contaminant concentrations are not decreasing (i.e., MNA does not appear to be occurring) or MNA is not occurring at a sufficient rate to meet a reasonable timeframe, the selected site remedy will be re-evaluated at that time.

5. Data Evaluation and Reporting

Results of the groundwater monitoring and sampling events will be evaluated to demonstrate that natural attenuation is occurring at the site. Following four quarters of baseline monitoring, an MNA analysis will be included in a revised Draft FS Report and submitted to Ecology for approval. The MNA analysis will include documentation of a stable or decreasing plume using COC concentration iso-contour figures, time-series plots of COC concentrations and measured depth to water, a linear regression analysis for site COCs at select monitoring wells, and discussion of water quality and observed trends.

6. References

Arcadis. 2022. Draft for Public Review – Preliminary Remedial Investigation Report, Former Chevron Station 97502, 640 Metcalf Street, Sedro-Woolley, Washington. July 15.

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Ecology. 2020. Agreed Order No. DE 18034. September 14.

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United States Environmental Protection Agency (USEPA). 1999. Final OSWER Directive “Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites” (OSWER Directive Number 9200.4-17P). April 21.

USEPA. 2017. Low Stress Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells. September 19.

Tables

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
GB-1	4/1/2008	--	--	--	--	--	<250	150	--	110	--	<4	<4	<4	<4	<4	--	--	**<4***	
GB-2	4/2/2008	--	--	--	--	--	100 [130]	330	--	<98	--	<0.5 [<0.5]	<0.5 [<0.5]	<0.5 [<0.5]	<0.5 [<0.5]	<0.5 [<0.5]	--	8.5	--	
GB-3	4/1/2008	--	--	--	--	--	79.0	88.0	--	<94.0	--	<0.5	<0.5	0.7	<0.5	<0.5	--	--	--	
GB-4	4/1/2008	--	--	--	--	--	<50.0	<81.0	--	<100.0	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	
GB-5	4/2/2008	--	--	--	--	--	**1,100**	**990**	--	<97.0	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	**27.8**	--	
MW-4	1/29/1992	--	--	--	--	--	**14,000**	ND	--	ND	--	**4,400**	340	**2,000**	**1,600**	--	--	--	--	
MW-4	9/25/1992	56.37	--	--	--	--	**25,000**	**5,060**	--	ND	--	**2,800**	830	**4,600**	**4,000**	--	--	--	--	
MW-4	2/24/1993	56.37	--	10.42	45.95	--	**7,970**	**3,460**	--	ND	--	**352**	2	418	**1,360**	--	--	--	--	
MW-4	5/17/1993	56.37	--	10.20	46.17	--	**9,180**	**2,630**	--	ND	--	**314**	281	**981**	**1,610**	--	--	--	--	
MW-4	8/2/1993	56.37	--	10.44	45.93	--	--	**1,390**	--	ND	--	--	--	--	--	--	--	--	--	
MW-4	8/24/1993	56.37	--	--	--	--	**14,900**	--	--	--	--	**152**	614	499	**2,880**	--	--	--	--	
MW-4	11/3/1993	56.37	--	11.67	44.70	--	**16,100**	**1,092**	--	ND	--	**114**	605	79	**1,980**	--	--	--	--	
MW-4	2/15/1994	56.37	--	11.54	44.83	--	**16,300**	**1,070**	--	ND	--	**203**	552	210	**1,810**	--	--	--	--	
MW-4	5/20/1994	56.37	--	11.00	45.37	--	**11,400**	**1,230**	--	ND	--	**92.2**	357	20	612	--	--	--	--	
MW-4	8/23/1994	56.37	--	11.84	44.53	--	**12,400**	**830**	--	ND	--	**67.1**	489	77	**1,740**	--	--	--	--	
MW-4	11/16/1994	56.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	2/10/1995	56.37	--	11.23	45.14	--	**11,000**	**1,700**	--	ND	--	**95**	160	310	890	--	--	ND	--	
MW-4	5/12/1995	56.37	--	10.80	45.57	--	**12,000**	**1,600**	--	ND	--	**55**	34	380	890	--	--	ND	--	
MW-4	8/11/1995	56.37	--	11.40	44.97	--	**11,000**	**1,000**	--	ND	--	**27**	33	340	980	--	--	ND	--	
MW-4	11/2/1995	56.37	--	11.73	44.64	--	**12,000**	**1,400**	--	**940**	--	**24**	24	220	430	--	--	ND	--	
MW-4	1/31/1996	56.37	--	9.62	46.75	--	**6,200**	**900**	--	ND	--	**17**	6.4	250	410	--	--	--	--	
MW-4	5/9/1996	56.37	--	9.88	46.49	--	97.7	253	--	ND	--	1.7	0.975	7.01	78	--	--	--	--	
MW-4	2/3/1997	56.37	--	8.83	47.54	--	ND	ND	--	ND	--	ND	ND	2.1	1.98	--	--	--	--	
MW-4	8/5/1997	56.37	--	10.10	46.27	--	172	ND	--	ND	--	0.876	0.635	7.36	17.3	--	--	--	--	
MW-4	2/11/1998	56.37	--	9.97	46.40	--	ND	ND	--	ND	--	1.15	0.975	0.997	2.66	--	--	--	--	
MW-4	8/27/1998	56.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/13/2000	56.37	--	9.75	46.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/19/2000	56.37	--	10.71	45.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/20/2001	56.37	--	10.45	45.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	8/21/2001	56.37	--	11.08	45.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	7/2/2005	56.37	--	7.86	48.51	--	<48	--	<80	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	--	3.3	**<0.5***	
MW-4	9/15/2005	56.37	--	8.93	47.44	--	**1,200**	--	310	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	--	1.2	--	
MW-4	12/31/2005	56.37	--	8.64	47.73	--	<48	--	<82	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	<0.87	--	
MW-4	3/11/2006	56.37	--	8.00	48.37	--	<48	--	<81	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	<0.87	--	
MW-4	6/13/2006	56.37	--	7.59	48.78	--	<48	--	<82	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.51	<0.51	--	
MW-4	8/10/2006	56.37	--	8.58	47.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/5/2006	56.37	--	8.48	47.89	--	<260	79 J	--	<260	--	<1.0	<1.0	<1.0	<3.0	<1.0	0.085 BJ	4.8 B	--	
MW-4	1/24/2007	56.37	--	7.71	48.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/8/2007	56.37	--	7.92	48.45	--	110	<130	--	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	3.5	--	
MW-4	6/4/2007	56.37	--	9.72	46.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/5/2007	56.37	--	8.76	47.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/19/2007	56.37	--	9.07	47.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/6/2008	56.37	--	7.78	48.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/16/2008	56.37	--	7.08	49.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/11/2008	56.37	--	7.35	49.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	11/20/2008	56.37	--	7.38	48.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/4/2009	56.37	--	6.89	49.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/4/2009	56.37	--	7.21	49.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/22/2009	56.37	--	9.04	47.33	--	<50	110	--	<70	--	--	--	--	--	--	--	--	--	
MW-4	9/23/2009	56.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	10/1/2009	56.37	--	9.80	46.57	--	**2,000**	**520**	--	<67	--	--	--	--	--	--	--	--	--	
MW-4	10/8/2009	56.37	--	10.11	46.26	--	330	**570**	--	<69	--	--	--	--	--	--	--	--	--	
MW-4	10/15/2009	56.37	--	10.18	46.19	--	420	**1,000**	--	<66	--	--	--	--	--	--	--	--	--	
MW-4	10/22/2009	56.37	--	10.03	46.34	--	370	**1,100**	--	<66	--	--	--	--	--	--	--	--	--	
MW-4	11/18/2009	56.37	--	9.11	47.26	--	**1,500**	**860**	--	<70	--	--	--	--	--	--	--	--	--	
MW-4	12/3/2009	56.37	--	8.16	48.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/16/2009	56.37	--	--	--	--	<50	53 J	--	<69	--	--	--	--	--	--	--	--	--	
MW-4	1/27/2010	56.37	--	8.50	47.87	--	58	--	<30	--	<70	--	--	--	--	--	--	--	--	
MW-4	2/12/2010	56.37	--	8.60	47.77	--	<50	--	<30	--	<69	--	--	--	--	--	--	--	--	
MW-4	3/30/2010	56.37	--	7.66	48.71	--	63	--	<30	--	<69	--	--	--	--	--	--	--	--	
MW-4	6/18/2010	56.37	--	7.80	48.57	--	<50	--	<30	--	<69	--	--	--	--	--	--	--	--	
MW-4	9/2/2010	56.37	--	9.33	47.04	--	**1,600**	**770**	--	<71	--	--	--	--	--	--	--	--	--	
MW-4	12/7/2010	56.37	--	9.33	47.04	--	440	--	320	--	<72	--	--	--	--	--	--	--	--	
MW-4	3/7/2011	56.37	--	6.98	49.39	--	<50	--	<30	--	<69	--	--	--	--	--	--	--	--	
MW-4	6/9/2011	56.37	--	6.48	49.89	--	110	--	37	--	73	--	--	--	--	--	--	--	--	
MW-4	9/16/2011	56.37	--	8.10	48.27	--	<50	--	<31	--	**870**	--	--	--	--	--	--	--	--	
MW-4	12/13/2011	56.37	--	8.65	47.72	--	530	--	<29	--	<68	--	--	--	--	--	--	--	--	
MW-4	12/19/2011	56.37	--	8.65	47.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	3/15/2012	56.37	--	9.75	46.62	--	<50	--	<30	--	<69	--	--	--	--	--	--	--	--	
MW-4	6/13/2012	56.37	--	7.00	49.37	--	<50	--	<30	--	<71	--	--	--	--	--	--	--	--	
MW-4	9/10/2012	56.37	--	8.40	47.97	--	160	--	74	--	<69	--	--	--	--	--	--	--	--	
MW-4	12/10/2012	56.37	--	7.31	49.06	--	<50	--	<30	--	<69	--	--	--	--	--	--	--	--	
MW-4	3/11/2013	56.37	--	6.68	49.69	--	<50	--	<29	--	<67	--	--	--	--	--	--	--	--	
MW-4	6/12/2013	56.37	--	6.91	49.46	--	<50	<28	--	<66	--	--	--	--	--	--	--	--	--	
MW-4	9/18/2013	56.37	--	8.08	48.29	--	150	120	--	<67	--	--	--	--	--	--	--	--	--	
MW-4	12/11/2013	56.37	--	7.64	48.73	--	<50	<28	--	<66	--	--	--	--	--	--	--	--	--	
MW-4	3/12/2014	56.37	--	7.64	48.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/27/2014	56.37	--	8.11	48.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	8/17/2020	56.37	--	8.62	47.75	--	37.1 BJ	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	--	--	<2.95	--	
MW-4	9/28/2021	56.42	--	9.80	46.62	--	**8,850**	440	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00	--	
MW-4	12/14/2021	56.42	--	7.39	49.03	--	<31.6	224	--	123 J	--	<0.0941	<0.278	<0.137	0.402 J	<0.101	<2.99	--	--	
MW-4	2/16/2022	56.42	--	7.10	49.32	--	<31.6	<66.7	--	115 J	--	<0.0941	<0.278	<0.137	0.391 J	<0.101	<0.849	--	--	
MW-4	6/6/2022	56.42	--	7.25	49.17	--	51.1 B J [<31.6]	78.1 J [<66.7]	--	<83.3 [239 J]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-4	9/27/2022	56.42	--	9.14	47.28	--	63.1 J	172 J	--	169 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-4	1/6/2023	56.42	--	8.62	47.80	--	47.4 B J	164 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-4	3/22/2023	56.42	--	8.42	48.00	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-4	6/20/2023	56.42	--	9.02	47.40	--	<100 [<100]	201 [149 J]	-- [--]	<250 [94.5 J]	-- [--]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 J3 [<1.00 J3]	<3.00 [<3.00]	<1.00 [<1.00]	1.70 J [1.38 J]	-- [--]	-- [--]	
MW-4	9/11/2023	56.42	--	10.22	46.20	--	76.3 J	**532**	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	1.50 B J	--	--	
MW-4	12/14/2023	56.42	--	9.71	46.71	--	43.0 B J	**847**	--	<83.3	--	<0.0941	<0.278	<0.137	0.255 J	<0.101	5.01	--	--	
MW-4	2/20/2024	56.42	--	8.78	47.64	--	60.0 B J3	163 J	--	92.8 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-4	6/11/2024	56.42	--	9.09	47.33	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-4	9/16/2024	56.42	--	9.06	47.36	--	89.8 B J	350	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-5	1/29/1992	--	--	--	--	--	**2,000**	**2,000**	--	ND	--	**345**	32	213	95	--	--	--	--	
MW-5	9/25/1992	56.54	--	--	--	--	**2,740**	**4,100**	--	ND	--	**833**	80	491	172	--	--	--	--	
MW-5	2/24/1993	56.54	--	9.35	47.19	--	509	**6,620**	--	ND	--	**254**	ND	7	6	--	--	--	--	
MW-5	5/17/1993	56.54	--	9.21	47.33	--	ND	410	--	ND	--	**15.5**	ND	2	2	--	--	--	--	
MW-5	8/2/1993	56.54	--	9.59	46.95	--	--	ND	--	ND	--	--	--	--	--	--	--	--	--	
MW-5	8/24/1993	56.54	--	--	--	--	260	--	--	--	--	**62**	8	ND	9	--	--	--	--	
MW-5	11/3/1993	56.54	--	11.00	45.54	--	**1,780**	**1,800**	--	ND	--	**243**	1	38	27	--	--	--	--	
MW-5	2/15/1994	56.54	--	10.76	45.78	--	**950**	**1,610**	--	ND	--	**914**	165	49	148	--	--	--	--	
MW-5	5/20/1994	56.54	--	10.15	46.39	--	**3,180**	**2,200**	--	ND	--	**599**	108	22	129	--	--	--	--	
MW-5	8/23/1994	56.54	--	10.95	45.59	--	**3,310**	**2,160**	--	ND	--	**701**	140	45	207	--	--	--	--	
MW-5	11/16/1994	56.54	--	11.22	45.32	--	**1,090**	**1,620**	--	ND	--	**258**	54	15	135	--	--	--	--	
MW-5	2/10/1995	56.54	--	10.36	46.18	--	**4,200**	**2,000**	--	310	--	**560**	24	140	180	--	--	ND	--	
MW-5	5/12/1995	56.54	--	9.86	46.68	--	**1,200**	**2,200**	--	ND	--	**480**	13	110	120	--	--	ND	--	
MW-5	8/11/1995	56.54	--	10.68	45.86	--	**4,400**	**1,700**	--	ND	--	**400**	14	140	180	--	--	ND	--	
MW-5	11/2/1995	56.54	--	10.89	45.65	--	**4,600**	**1,800**	--	ND	--	**500**	16	110	160	--	--	ND	--	
MW-5	1/31/1996	56.54	--	8.40	48.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/9/1996	56.54	--	8.73	47.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	2/3/1997	56.54	--	7.20	49.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/5/1997	56.54	--	9.36	47.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	2/11/1998	56.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/27/1998	56.54	--	10.14	46.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	1/19/1999	56.54	--	8.31	48.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/30/1999	56.54	--	9.58	46.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/13/2000	56.54	--	8.57	47.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/19/2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-5	3/20/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-5	8/21/2001	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-5	3/11/2002	56.54	--	8.50	48.04	--	<50	--	<250	--	**<750***	<0.50	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	7/3/2002	56.54	--	8.96	47.58	--	<50	--	<250	--	**<750***	<0.50	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	9/13/2002	56.54	--	10.43	46.11	--	72	--	<250	--	<250	0.85	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	12/16/2002	56.54	--	10.59	45.95	--	730	--	**820**	--	<250	**80**	1.6	6.7	<1.5	<5.0	--	--	--	
MW-5	3/6/2003	56.54	--	9.84	46.70	--	<50	--	<250	--	<250	0.54	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-5	6/4/2003	56.54	--	9.30	47.24	--	<50	--	<250	--	<250	**5.3**	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	9/11/2003	56.54	--	10.86	45.68	--	**990**	--	**1,300**	--	<250	**110**	1.7	7.7	<1.5	<2.5	--	--	--	
MW-5	12/17/2003	56.54	--	8.86	47.68	--	<50	--	<250	--	<250	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	3/17/2004	56.54	--	8.22	48.32	--	<50	--	<250	--	<250	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	6/11/2004	56.54	--	8.42	48.12	--	<50	--	<250	--	<250	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	9/21/2004	56.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-5	12/21/2004	56.54	--	6.85	49.69	--	<50	--	<250	--	<250	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-5	7/2/2005	56.54	--	8.31	48.23	--	<48	--	100	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	--	4.1	**<0.5***	
MW-5	9/15/2005	56.54	--	9.48	47.06	--	130	--	100	--	<98	<0.5	<0.5	<0.5	<0.5	<0.5	--	4.7	--	
MW-5	12/31/2005	56.54	--	8.98	47.56	--	<48	--	<80	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	2.7	--	
MW-5	3/11/2006	56.54	--	8.18	48.36	--	<48	--	<80	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	1.3	--	
MW-5	6/13/2006	56.54	--	7.89	48.65	--	<48	--	<79	--	<99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.51	<0.51	--	
MW-5	8/10/2006	56.54	--	8.90	47.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/5/2006	56.54	--	8.82	47.72	--	100	64 J	--	90	--	<1.0	0.071 J	<1.0	<3.0	<1.0	0.050 BJ	12 B	--	
MW-5	1/24/2007	56.54	--	8.13	48.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/8/2007	56.54	--	8.19	48.35	--	58	<130	--	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	**18**	--	
MW-5	6/4/2007	56.54	--	8.59	47.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/5/2007	56.54	--	9.07	47.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/19/2007	56.54	--	9.24	47.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/6/2008	56.54	--	8.22	48.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/16/2008	56.54	--	7.04	49.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/11/2008	56.54	--	7.48	49.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	11/20/2008	56.54	--	7.45	49.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/4/2009	56.54	--	6.92	49.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/4/2009	56.54	--	7.30	49.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/3/2009	56.54	--	8.38	48.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/30/2010	56.54	--	7.65	48.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/18/2010	56.54	--	8.07	48.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/2/2010	56.54	--	9.64	46.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/7/2010	56.54	--	9.56	46.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/7/2011	56.54	--	7.10	49.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/9/2011	56.54	--	6.41	50.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/16/2011	56.54	--	8.40	48.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/13/2011	56.54	--	9.00	47.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/19/2011	56.54	--	8.90	47.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/15/2012	56.54	--	8.80	47.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/13/2012	56.54	--	7.15	49.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/10/2012	56.54	--	8.76	47.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/10/2012	56.54	--	7.82	48.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/11/2013	56.54	--	6.98	49.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/12/2013	56.54	--	7.22	49.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/18/2013	56.54	--	8.60	47.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/11/2013	56.54	--	8.10	48.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/12/2014	56.54	--	8.86	47.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/27/2014	56.54	--	8.63	47.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/18/2020	56.54	--	9.03	47.51	--	92.8 BJ	121 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	--	--	9.29	--	
MW-5	9/28/2021	56.53	--	10.25	46.28	--	539	305	--	<250	--	<1.00	<1.00	0.593 J	1.36J	<1.00	--	<6.00	--	
MW-5	12/16/2021	56.53	--	7.52	49.01	--	<31.6	74.9 J	--	104 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<2.99	--	--	
MW-5	2/16/2022	56.53	--	7.20	49.33	--	55.8 B J	<66.7	--	112 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-5	6/6/2022	56.53	--	7.33	49.20	--	50.4 B J [<31.6]	<66.7 [<66.7]	--	<83.3 [281]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-5	9/27/2022	56.53	--	9.60	46.93	--	67.3 J	133 J	--	214 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-5	1/6/2023	56.53	--	8.77	47.76	--	42.7 B J	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-5	3/22/2023	56.53	--	8.49	48.04	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-5	6/21/2023	56.53	--	9.33	47.20	--	156 B	125 J	--	89.8 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-5	9/11/2023	56.53	--	10.70	45.83	--	424	360	--	<83.3	--	<0.0941	0.292 J	<0.137	0.457 J	<0.101	<0.849	--	--	
MW-5	12/13/2023	56.53	--	8.26	48.27	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-5	2/20/2024	56.53	--	8.94	47.59	--	59.7 B J J3	73.7 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-5	6/11/2024	56.53	--	9.20	47.33	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-5	9/16/2024	56.53	--	9.32	47.21	--	44.7 B J	112 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-6	1/29/1992	--	--	--	--	--	ND	ND	--	ND	--	**39**	3	2	8	--	--	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-6	9/25/1992	57.07	--	--	--	--	ND	ND	--	ND	--	**5.5**	ND	ND	ND	--	--	--	--	
MW-6	2/24/1993	57.07	--	9.33	47.74	--	ND	360	--	ND	--	**8.6**	ND	ND	1	--	--	--	--	
MW-6	5/17/1993	57.07	--	9.03	48.04	--	ND	**930**	--	ND	--	**19**	ND	ND	1	--	--	--	--	
MW-6	8/2/1993	57.07	--	9.99	47.08	--	--	290	--	ND	--	--	--	--	--	--	--	--	--	
MW-6	8/24/1993	57.07	--	--	--	--	ND	--	--	--	--	**5**	ND	ND	ND	--	--	--	--	
MW-6	11/3/1993	57.07	--	10.35	46.72	--	ND	ND	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	2/15/1994	57.07	--	10.14	46.93	--	ND	ND	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	5/20/1994	57.07	--	9.79	47.28	--	ND	270	--	ND	--	**7.7**	ND	ND	ND	--	--	--	--	
MW-6	8/23/1994	57.07	--	10.49	46.58	--	ND	ND	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	11/16/1994	57.07	--	10.47	46.60	--	ND	440	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	2/10/1995	57.07	--	9.84	47.23	--	ND	240	--	240	--	ND	ND	ND	ND	--	--	ND	--	
MW-6	5/12/1995	57.07	--	9.64	47.43	--	ND	270	--	ND	--	ND	ND	ND	ND	--	--	ND	--	
MW-6	8/11/1995	57.07	--	10.13	46.94	--	ND	ND	--	ND	--	ND	ND	ND	ND	--	--	ND	--	
MW-6	11/2/1995	57.07	--	10.27	46.80	--	ND	390	--	ND	--	ND	ND	ND	ND	--	--	ND	--	
MW-6	1/31/1996	57.07	--	8.48	48.59	--	59	270	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	5/9/1996	57.07	--	8.78	48.29	--	ND	494	--	ND	--	0.587	ND	ND	ND	--	--	--	--	
MW-6	2/3/1997	57.07	--	7.75	49.32	--	ND	280	--	**1,100**	--	ND	ND	ND	ND	--	--	--	--	
MW-6	8/5/1997	57.07	--	9.00	48.07	--	54.6	ND	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	2/11/1998	57.07	--	9.48	47.59	--	ND	269	--	ND	--	0.917	ND	ND	ND	--	--	--	--	
MW-6	8/27/1998	57.07	--	9.81	47.26	--	ND	ND	--	ND	--	ND	ND	ND	ND	ND	--	ND	--	
MW-6	1/19/1999	57.07	--	8.28	48.79	--	ND	287	--	ND	--	0.835	ND	ND	ND	--	--	--	--	
MW-6	8/30/1999	57.07	--	9.40	47.67	--	ND	ND	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	3/13/2000	57.07	--	8.53	48.54	--	ND	317	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-6	9/19/2000	57.07	--	9.52	47.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/20/2001	57.07	--	9.17	47.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	8/21/2001	57.07	--	9.78	47.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/11/2002	57.07	--	8.09	48.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	7/3/2002	57.07	--	8.36	48.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/13/2002	57.07	--	9.49	47.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/16/2002	57.07	--	10.02	47.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/6/2003	57.07	--	9.23	47.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/4/2003	57.07	--	8.78	48.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/11/2003	57.07	--	10.33	46.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/17/2003	57.07	--	8.40	48.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/17/2004	57.07	--	7.51	49.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/11/2004	57.07	--	7.59	49.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/21/2004	57.07	--	7.43	49.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/21/2004	57.07	--	7.22	49.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	7/2/2005	57.07	--	8.30	48.77	--	<48	--	<80	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	--	**15.6**	**<0.5***	
MW-6	9/15/2005	57.07	--	9.22	47.85	--	<48	--	<82	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	--	**28.9**	--	
MW-6	12/31/2005	57.07	--	8.75	48.32	--	<48	--	<81	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	4.1	--	
MW-6	3/11/2006	57.07	--	8.22	48.85	--	<48	--	<81	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.87	<0.87	--	
MW-6	6/13/2006	57.07	--	7.98	49.09	--	<48	--	<80	--	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.51	<0.51	--	
MW-6	8/10/2006	57.07	--	8.82	48.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/5/2006	57.07	--	8.53	48.54	--	<50	49 J	--	110 J	--	<1.0	<1.0	<1.0	<3.0	<1.0	0.050 BJ	**45 B**	--	
MW-6	1/24/2007	57.07	--	7.88	49.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	5/8/2007	57.07	--	8.04	49.03	--	<50	<130	--	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	**18**	--	
MW-6	6/4/2007	57.07	--	8.78	48.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/5/2007	57.07	12.57	9.85	47.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/19/2007	57.07	--	9.21	47.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/6/2008	57.07	--	8.34	48.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/16/2008	57.07	--	7.72	49.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/11/2008	57.07	--	7.98	49.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	11/20/2008	57.07	--	7.90	49.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/4/2009	57.07	--	7.68	49.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/4/2009	57.07	--	8.06	49.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/3/2009	57.07	--	8.29	48.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/30/2010	57.07	--	8.26	48.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/18/2010	57.07	--	8.23	48.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/2/2010	57.07	--	9.30	47.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/7/2010	57.07	--	9.10	47.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/7/2011	57.07	--	7.52	49.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/9/2011	57.07	--	7.27	49.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/16/2011	57.07	--	8.52	48.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/13/2011	57.07	--	8.60	48.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/19/2011	57.07	--	8.52	48.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/15/2012	57.07	--	8.50	48.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/13/2012	57.07	--	7.40	49.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/10/2012	57.07	--	8.60	48.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/10/2012	57.07	--	7.61	49.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/11/2013	57.07	--	7.07	50.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	6/12/2013	57.07	--	6.83	50.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/18/2013	57.07	--	8.44	48.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	12/11/2013	57.07	--	7.81	49.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/12/2014	57.07	--	12.06	45.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/27/2014	57.07	--	8.48	48.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	8/18/2020	57.07	--	8.78	48.29	--	44.7 BJ	75.6 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	--	--	<2.95	--	
MW-6	9/27/2021	57.02	--	10.3	46.72	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00		
MW-6	12/14/2021	57.02	--	7.69	49.33	--	<31.6	71.7 J	--	<83.3	--	<0.0941	<0.278	<0.137	0.210 J	<0.101	<2.99	--	--	
MW-6	2/16/2022	57.02	--	7.77	49.25	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-6	6/6/2022	57.02	--	7.88	49.14	--	50.9 B J J3	75.1 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-6	9/28/2022	57.02	--	9.25	47.77	--	<100	68.8 J	--	151 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-6	1/6/2023	57.02	--	8.57	48.45	--	34.7 B J	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-6	3/22/2023	57.02	--	8.5	48.52	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-6	6/20/2023	57.02	--	9.25	47.77	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	0.914 J	--	--	
MW-6	9/12/2023	57.02	--	9.95	47.07	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	0.325 J	<0.101	<0.849	--	--	
MW-6	12/13/2023	57.02	--	9.18	47.84	--	31.6 J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-6	2/21/2024	57.02	--	8.69	48.33	--	57.6 B J J3	101 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-6	6/11/2024	57.02	--	9.39	47.63	--	62.7 B J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-6	9/16/2024	57.02	--	10.50	46.52	--	<31.6 [<31.6]	<66.7 [<66.7]	-- [--]	<83.3 [<83.3]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101[<0.101]	<0.849[<0.849]	-- [--]	-- [--]	
MW-7	1/29/1992	--	--	--	--	--	**30,000**	ND	--	ND	--	**3,400**	870	**2,900**	**4,500**	--	--	--	--	
MW-7	9/25/1992	58.98	--	--	--	--	**2,770**	ND	--	ND	--	**863**	81	509	168	--	--	--	--	
MW-7	2/24/1993	58.98	9.84	9.99	49.11	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/17/1993	58.98	9.75	9.90	49.20	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/2/1993	58.98	--	9.99	48.99	--	--	**13,800**	--	ND	--	--	--	--	--	--	--	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-7	8/24/1993	58.98	--	--	--	--	**88,000**	--	--	--	--	**1,100**	620	**2,200**	**13,000**	--	--	--	--	
MW-7	11/3/1993	58.98	--	11.01	47.97	--	**100,000**	**59,000**	--	ND	--	**2,500**	898	**6,300**	**6,470**	--	--	--	--	
MW-7	2/15/1994	58.98	--	10.85	48.13	--	**31,000**	**1,340**	--	ND	--	**1,210**	751	**2,910**	**3,960**	--	--	--	--	
MW-7	5/20/1994	58.98	--	10.34	48.64	--	**47,000**	**4,950**	--	ND	--	**1,200**	700	**2,000**	**4,200**	--	--	--	--	
MW-7	8/23/1994	58.98	--	11.13	47.85	--	**25,400**	**11,200**	--	**800**	--	**1,070**	844	**2,200**	**4,130**	--	--	--	--	
MW-7	11/16/1994	58.98	--	11.70	47.28	--	**56,000**	**52,700**	--	**3,150**	--	**380**	917	**2,500**	**8,100**	--	--	--	--	
MW-7	2/10/1995	58.98	--	10.62	48.36	--	**93,000**	**69,000**	--	ND	--	**1,200**	**3,700**	**1,300**	**8,100**	--	--	**24**	--	
MW-7	5/12/1995	58.98	10.14	10.14	48.84	Sheen	**37,000**	**19,000**	--	**2,800**	--	**1,300**	**2,800**	**1,100**	**6,400**	--	--	8.2	--	
MW-7	8/11/1995	58.98	10.79	10.79	48.19	Sheen	**61,000**	**1,600**	--	ND	--	**440**	**2,000**	**1,300**	**6,100**	--	--	5.8	--	
MW-7	11/2/1995	58.98	11.12	11.12	47.86	Sheen	**94,000**	**57,000**	--	ND	--	**360**	**1,300**	**1,000**	**5,500**	--	--	5.5	--	
MW-7	1/31/1996	58.98	--	9.20	49.78	--	**27,000**	**3,700**	--	ND	--	**250**	**1,100**	650	**3,800**	--	--	--	--	
MW-7	5/9/1996	58.98	9.40	9.40	49.58	Sheen	**163,000**	**11,600**	--	ND	--	**638**	**2,390**	**1,850**	**10,600**	--	--	--	--	
MW-7	2/3/1997	58.98	--	8.85	88.76	--	**10,600**	**961**	--	ND	--	**11.1**	10.6	32.3	185	--	--	--	--	
MW-7	8/5/1997	58.98	9.56	9.56	49.42	Sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	2/11/1998	58.98	9.52	9.52	49.46	Sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/27/1998	58.98	10.29	10.30	48.69	0.01	**62,000**	**2,600**	--	ND	--	**1,600**	**7,440**	**1,340**	**9,210**	--	--	**24**	--	
MW-7	1/19/1999	58.98	--	9.44	49.54	--	**9,190**	**1,480**	--	ND	--	**59.6**	**2,070**	251	935	--	--	--	--	
MW-7	8/30/1999	58.98	10.07	10.07	48.91	Sheen	**26,900**	**5,580**	--	ND	--	**100**	**1,040**	413	**2,640**	--	--	--	--	
MW-7	3/13/2000	58.98	9.30	9.30	49.68	Sheen	**49,600**	**4,330**	--	ND	--	**795**	**4,500**	**1,080**	**7,190**	--	--	--	--	
MW-7	9/19/2000	58.98	10.14	10.28	48.81	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/20/2001	58.98	9.84	9.98	49.04	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/21/2001	58.98	10.31	10.36	48.66	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/11/2002	58.98	--	9.23	49.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	7/3/2002	--	--	11.68	--	--	**37,000**	--	**3,900**	--	<750	**640**	**2,500**	550	**3,700**	<6.0	--	--	--	
MW-7	7/26/2002	--	--	10.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/17/2002	--	--	10.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/13/2002	--	12.33	12.36	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	10/15/2002	--	--	11.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	11/8/2002	--	--	12.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/16/2002	--	12.75	12.77	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	1/11/2003	--	10.77	10.81	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	2/14/2003	--	12.12	12.15	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/6/2003	--	11.92	11.94	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	4/22/2003	--	12.01	12.04	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/21/2003	--	12.01	12.04	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/4/2003	--	--	11.84	--	--	**96,000**	--	**6,300**	--	**600**	**580**	**4,100**	**1,500**	**10,000**	**<20***	--	--	--	
MW-7	7/17/2003	--	12.87	12.90	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	8/12/2003	--	12.04	12.06	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/11/2003	--	12.95	13.01	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	10/20/2003	--	12.78	12.82	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/17/2003	--	--	11.32	--	--	**53,000**	--	**15,000**	--	<2,400	**80**	820	530	**4,700**	11	--	--	--	
MW-7	3/17/2004	--	10.88	10.90	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/22/2004	--	--	11.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/11/2004	--	--	10.98	--	--	**1,600**	--	**8,800**	--	**2,200**	<1.0	1.3	8.2	57	<2.5	--	--	--	
MW-7	7/22/2004	--	11.42	11.44	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/1/2004	--	11.02	11.04	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/21/2004	--	--	10.79	--	--	**10,000**	--	**19,000**	--	**2,300**	<5.0	28	66	500	<5.0	--	--	--	
MW-7	12/21/2004	--	--	10.31	--	--	**25,000**	--	**5,700**	--	**1,000**	<5.0	180	270	**2,100**	<5.0	--	--	--	
MW-7	7/2/2005	58.98	--	11.01	47.97	--	520	--	**23,000**	--	**3,000**	<0.5	<0.5	<0.5	<0.5	<0.5	--	**786**	**<0.5***	
MW-7	9/15/2005	58.98	--	11.84	47.14	--	**7,400**	--	**2,900**	--	**800**	**43**	**1,200**	130	740	<1	--	**203**	--	
MW-7	12/31/2005	58.98	--	11.61	47.37	--	**20,000**	--	**3,600**	--	<490	**45**	**1,900**	470	**2,600**	<3	12.8	**34.8**	--	
MW-7	3/11/2006	58.98	--	10.99	47.99	--	**2,900**	--	**730**	--	**550**	<0.5	10	16	140	<0.5	2.4	**32.4**	--	
MW-7	6/13/2006	58.98	--	10.81	48.17	--	**160,000**	--	**14,000**	--	<2,000	**8**	**1,100**	640	**4,800**	<3	**15.5**	**159**	--	
MW-7	8/10/2006	58.98	11.77	11.80	47.20	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/5/2006	58.98	--	11.57	47.41	--	**45,000**	**210,000**	--	**4,300**	--	3.1	**1,300**	**950**	**7,100**	<1.0	**92 B**	**920 B**	--	
MW-7	1/24/2007	58.98	10.50	10.62	48.46	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/8/2007	58.98	10.81	10.88	48.16	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/4/2007	58.98	--	11.56	47.42	--	**9,200**	**2,200**	--	<190	--	**14**	360	67	520	<0.5	--	**26.2**	**<0.5***	
MW-7	9/5/2007	58.98	12.57	12.69	46.39	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	12/19/2007	58.98	--	12.22	46.76	--	**15,000**	--	**21,000**	--	<2,500	<1	210	250	**1,500**	<1	--	**52.5**	**<1***	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	3/6/2008	58.98	11.00	11.03	47.97	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	6/16/2008	58.98	10.22	10.25	48.75	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/11/2008	58.98	10.45	10.47	48.53	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	11/20/2008	58.98	10.46	10.47	48.52	0.01	**56,000**	--	**54,000**	--	<8,600	**<13***	71	590	**4,300**	<13	--	--	**<13***	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel, eluting in the DRO range earlier than #2 fuel.
MW-7	3/4/2009	58.98	--	9.67	49.31	--	**2,400**	--	**13,000**	--	<680	<0.5	<0.5	4	65	<0.5	--	--	**<0.5***	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	6/4/2009	58.98	--	10.04	48.94	--	**2,800**	--	140	--	<68	<0.5	<0.5	0.9	18	<0.5	--	--	**<0.5***	
MW-7	9/22/2009	58.98	--	12.08	46.90	Sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/23/2009	58.98	--	13.02	45.96	--	**370,000**	**530,000**	--	**110,000 J**	--	--	--	--	--	--	--	--	--	
MW-7	9/24/2009	58.98	--	12.69	46.29	--	**160,000**	**48,000**	--	**27,000 J**	--	--	--	--	--	--	--	--	--	
MW-7	10/1/2009	58.98	--	12.63	46.35	--	**22,000**	**4,800**	--	**27,000**	--	--	--	--	--	--	--	--	--	
MW-7	10/8/2009	58.98	--	12.81	46.17	--	**16,000**	**590**	--	440 J	--	--	--	--	--	--	--	--	--	
MW-7	10/15/2009	58.98	--	12.95	46.03	--	**14,000**	**790**	--	430	--	--	--	--	--	--	--	--	--	
MW-7	10/22/2009	58.98	--	12.86	46.12	--	**11,000**	430	--	95 J	--	--	--	--	--	--	--	--	--	
MW-7	11/18/2009	58.98	--	12.12	46.86	--	**24,000**	**1,400**	--	**1,600 J**	--	--	--	--	--	--	--	--	--	
MW-7	12/3/2009	58.98	--	11.27	47.71	--	**37,000**	--	**18,000**	--	<1,700	**<10***	560	**770**	**4,800**	<10	--	--	**<10***	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	12/16/2009	58.98	--	--	--	--	**22,000**	**2,000**	--	**970 J**	--	--	--	--	--	--	--	--	--	
MW-7	1/27/2010	58.98	--	11.24	47.74	--	**33,000**	--	**9,700**	--	**1,700**	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	2/12/2010	58.98	--	11.30	47.68	--	**36,000**	--	**5,200**	--	410	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel, eluting in the DRO range earlier than #2 fuel.

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-7	3/30/2010	58.98	--	10.85	48.13	--	**32,000**	--	**8,400**	--	<1,400	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-7	6/18/2010	58.98	--	10.71	48.27	--	**2,500**	--	**1,100**	--	350	<0.5	2	2	30	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes later in the DRO range.
MW-7	9/2/2010	58.98	--	12.21	46.77	--	**22,000**	**3,500**	--	370	--	2	480	**720**	**4,200**	--	--	--	--	
MW-7	12/7/2010	58.98	--	12.85	46.13	--	**30,000**	460	--	--	<72	<3	380	**800**	**4,500**	--	--	--	--	
MW-7	3/7/2011	58.98	--	9.71	49.27	--	<50	--	**2,000**	--	**1,100**	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	6/9/2011	58.98	--	9.28	49.70	--	<50	--	**780**	--	360	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	9/16/2011	58.98	--	10.90	48.08	--	<50	--	330	--	<69	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	12/13/2011	58.98	--	11.40	47.58	--	**2,100**	--	33	--	<67	0.9	91	82	440	--	--	--	--	
MW-7	12/19/2011	58.98	--	11.33	47.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/15/2012	58.98	--	9.80	49.18	--	<50	--	120	--	<69	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	6/13/2012	58.98	--	9.60	49.38	--	230	--	86	--	<72	<0.5	<0.5	0.8	<0.5	--	--	--	--	
MW-7	9/10/2012	58.98	--	11.20	47.78	--	240	--	**860**	--	<700	<0.5	4	5	29	--	--	--	--	In analyzing HO w/ silica gel, the observed sample pattern includes #2 fuel/diesel, eluting in the DRO range later than #2 fuel.
MW-7	12/10/2012	58.98	--	10.21	48.77	--	<50	--	300	--	140	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	3/11/2013	58.98	--	9.41	49.57	--	<50	--	330	--	200	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	6/12/2013	58.98	--	9.85	49.13	--	<50	82	--	<68	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	9/18/2013	58.98	--	11.16	47.82	--	**1,300**	190	--	<67	--	0.8	150	41	210	--	--	--	--	
MW-7	12/11/2013	58.98	--	10.67	48.31	--	<50	360	--	190	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	3/12/2014	58.98	--	9.18	49.80	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	9/27/2014	58.98	--	11.23	47.75	--	<50	--	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-7	8/17/2020	58.98	--	11.45	47.53	--	**2,080**	**549**	--	143 J	--	0.561 J	23.7	101	488	--	--	<2.95	--	
MW-7	9/28/2021	58.93	--	12.73	46.20	--	**8,990**	**565**	--	<250	--	0.124 J	14.6	359 E	**1,390 E**	<1.00	--	<6.00		
MW-7	12/15/2021	58.93	--	10.07	48.86	--	<31.6	95.7 J	--	185 J	--	<0.0941	<0.278	0.321 J	<0.101	<2.99	--	--		
MW-7	2/16/2022	58.93	--	9.31	49.62	--	<31.6	<66.7	--	155 J	--	<0.0941	<0.278	0.241 J	<0.101	1.14 J	--	--		
MW-7	6/7/2022	58.93	--	9.40	49.53	--	50.7 B J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-7	9/28/2022	58.93	--	11.95	46.98	--	**5,530**	**530**	--	<250	--	0.390 J	27.1	216 E	**1,190 Q**	<1.00	<2.00	--	--	
MW-7	1/5/2023	58.93	--	11.55	47.38	--	**18,300**	**918**	--	<250	--	**<10.0***	45.0	612	**3,270**	<10.0	<2.00	--	--	
MW-7	3/23/2023	58.93	--	11.22	47.71	--	**10,300**	**540**	--	<250	--	**<25.0***	27.1	415	**2,490**	**<25.0***	0.863 J	--	--	
MW-7	6/20/2023	58.93	--	10.97	47.96	--	**18,300**	**674**	--	<250	--	**<25.0***	21.1 J	338 J3	**2,100**	**<25.0***	2.12	--	--	
MW-7	9/11/2023	58.93	--	13.16	45.77	--	**6,230**	**782**	--	<83.3	--	<2.35	<6.95	179	999	<2.53	2.13 B	--	--	
MW-7	12/14/2023	58.93	--	11.24	47.69	--	**5,190**	**519**	--	<83.3	--	<2.35	<6.95	125	667	<2.53	1.72 J	--	--	
MW-7	2/20/2024	58.93	--	11.73	47.20	--	**7,730 J3**	**1,290**	--	92.8 J	--	<2.35	24.4 J	454	**2,530**	<2.53	3.06	--	--	
MW-7	6/11/2024	58.93	--	11.06	47.87	--	167 B	68.1 J	--	<83.3	--	<0.0941	<0.278	<0.137	2.47 J	<0.101	<0.849	--	--	
MW-7	9/17/2024	58.93	--	11.95	46.98	--	**8,190**	**1,120**	--	<83.3	--	<0.0941	26.6	589	**3,590**	<0.101	3.48	--	--	
MW-8	1/29/1992	--	--	--	--	--	**37,000**	**2,000**	--	ND	--	**4,600**	320	**8,900**	**1,600**	--	--	--	--	
MW-8	9/25/1992	56.56	--	--	--	--	**24,000 [25,000]**	**5,350**	--	ND	--	**6,100 [6,400]**	378/376	**8,000 [8,200]**	**1,600 [1,700]**	--	--	--	--	
MW-8	2/24/1993	56.56	--	9.90	46.66	--	**28,000**	**590**	--	ND	--	**520**	200	**8,300**	950	--	--	--	--	
MW-8	5/17/1993	56.56	--	9.63	46.93	--	**34,000**	**540**	--	ND	--	**2,000**	180	**11,000**	770	--	--	--	--	
MW-8	8/2/1993	56.56	--	10.19	46.37	--	--	**970**	--	ND	--	--	--	--	--	--	--	--	--	
MW-8	8/24/1993	56.56	--	--	--	--	**68,000**	--	--	--	--	**1,050**	220	**16,000**	**1,660**	--	--	--	--	
MW-8	11/3/1993	56.56	--	11.28	45.28	--	**2,100**	**1,340**	--	ND	--	**18.9**	ND	ND	200	--	--	--	--	
MW-8	2/15/1994	56.56	--	11.15	45.41	--	**2,860**	**1,630**	--	ND	--	**942**	140	377	286	--	--	--	--	
MW-8	5/20/1994	56.56	--	10.56	46.00	--	**14,000**	**910**	--	ND	--	**740**	130	**3,600**	410	--	--	--	--	
MW-8	8/23/1994	56.56	--	11.41	45.15	--	**7,990**	**1,830**	--	ND	--	**2,060**	298	**1,160**	**1,160**	--	--	--	--	
MW-8	11/16/1994	56.56	--	11.70	44.86	--	**17,600**	**2,160**	--	ND	--	**1,130**	207	**2,700**	892	--	--	--	--	
MW-8	2/10/1995	56.56	--	10.87	45.69	--	**10,000**	**1,600**	--	**500**	--	**1,100**	**1,300**	180	820	--	**17**	--	--	
MW-8	5/12/1995	56.56	--	10.37	46.19	--	**19,000**	**870**	--	ND	--	**1,200**	**5,700**	240	**1,000**	--	--	ND	--	
MW-8	8/11/1995	56.56	--	10.98	45.58	--	**9,000**	**990**	--	ND	--	**470**	860	320	**1,300**	--	--	ND	--	
MW-8	11/2/1995	56.56	--	11.35	45.21	--	**11,000**	**1,700**	--	**1,100**	--	**820**	710	300	**1,200**	--	--	ND	--	
MW-8	1/31/1996	56.56	--	9.03	47.53	--	**15,000**	**510**	--	ND	--	**370**	**4,600**	170	710	--	--	--	--	
MW-8	5/9/1996	56.56	--	9.37	47.19	--	**17,000**	300	--	ND	--	**421**	**6,200**	198	807	--	--	--	--	
MW-8	2/3/1997	56.56	--	8.27	48.29	--	**11,600**	360	--	ND	--	**258**	**3,750**	225	910	--	--	--	--	
MW-8	8/5/1997	56.56	--	9.46	47.10	--	**9,160**	ND	--	ND	--	ND	**1,810**	167	615	--	--	--	--	
MW-8	2/11/1998	56.56	--	9.97	46.59	--	**6,310**	ND	--	ND	--	**476**	680	158	585	--	--	--	--	
MW-8	8/27/1998	56.56	--	10.50	46.06	--	**2,810**	ND	--	ND	--	ND	425	113	448	ND	--	--	--	
MW-8	1/19/1999	56.56	--	9.12	47.44	--	ND	271	--	ND	--	ND	249	27.4	96.1	--	--	--	--	
MW-8	8/30/1999	56.56	--	10.01	46.55	--	**1,180**	**623**	--	ND	--	**15.8**	17.8	57.9	198	--	--	--	--	
MW-8	3/13/2000	56.56	--	9.19	47.37	--	**1,990**	318	--	ND	--	**11.5**	168	73.4	255	--	--	--	--	
MW-8	9/19/2000	56.56	--	10.21	46.35	--	**1,540**	268	--	ND	--	ND	ND	66.3	239	ND	--	--	--	
MW-8	3/20/2001	56.56	--	10.10	46.46	--	ND	--	--	--	--	ND	ND	ND	117	ND	--	--	--	
MW-8	8/21/2001	56.56	--	12.31	44.25	--	**5,230**	309	--	<500	--	**33.8**	6.81	58.9	196	**27.3**	--	--	--	
MW-8	3/11/2002	56.56	--	9.14	47.42	--	**1,100**	--	250	--	<750	**6.4**	41	73	250	<2.5	--	--	--	
MW-8	7/3/2002	56.56	--	9.60	46.96	--	**1,100**	--	<250	--	<750	<2.0	<5.0	69	230	<2.5	--	--	--	
MW-8	9/13/2002	56.56	--	9.99	46.57	--	**920**	--	309	--	<250	**<20***	2.1	34	150	**67**	--	--	--	
MW-8	12/16/2002	56.56	--	11.00	45.56	--	**1,300**	--	**520**	--	<250	**<50***	4.8	30	69	**<20***	--	--	--	
MW-8	3/6/2003	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	6/4/2003	56.56	--	9.85	46.71	--	680	--	300	--	<250	**<50***	1.9	31	110	**<50***	--	--	--	
MW-8	9/11/2003	56.56	--	11.08	45.48	--	**2,400**	--	**650**	--	<250	**31**	14	110	170	<5.0	--	--	--	
MW-8	3/6/2003	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	3/17/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	6/11/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	9/21/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	12/21/2004	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-8	8/10/2006	56.56	--	9.30	47.26	--	580	210	--	<110	--	1	<0.5	14	29	<0.5	<0.047	8.5	--	
MW-8	12/5/2006	56.56	--	9.26	47.30	--	**850**	230 J	--	170 J	--	0.64 J	0.49 J	24	62.9	<1.0	0.51 BJ	**15 B**	--	
MW-8	1/24/2007	56.56	--	8.41	48.15	--	690	180	--	<270	--	<1.0	<1.0	30	98.1	<1.0	<2.0	**19**	--	
MW-8	5/8/2007	56.56	--	8.65	47.91	--	**1,200**	410	--	--	--	<2.0	28	37	155	<2.0	<2.0	13	--	
MW-8	6/4/2007	56.56	--	9.03	47.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	9/5/2007	56.56	--	9.70	46.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	12/19/2007	56.56	--	9.88	46.68	--	570	--	**1,200**	--	**860**	<0.5	0.7	3	4	<0.5	--	8	**<0.5***	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes later in the DRO range.
MW-8	3/6/2008	56.56	--	8.48	48.08	--	260	--	--	--	--	<0.5	<0.5	8	17	--	--	--	--	
MW-8	6/16/2008	56.56	--	7.72	48.84	--	190	--	--	--	--	<1	<1	3	4	--	--	--	--	
MW-8	9/11/2008	56.56	--	8.10	48.46	--	510	--	--	--	--	<1	<1	16	25	--	--	--	--	
MW-8	11/20/2008	56.56	--	8.22	48.34	--	280	--	--	--	--	<0.5	<0.5	3	6	--	--	--	--	
MW-8	3/4/2009	56.56	--	7.39	49.17	--	180	--	--	--	--	<0.5	<0.5	4	8	--	--	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-8	6/4/2009	56.56	--	7.68	48.88	--	730	--	--	--	--	<3	<3	20	47	--	--	--	--	
MW-8	9/22/2009	56.56	--	9.69	46.87	--	550	**880**	--	**1,300**	--	--	--	--	--	--	--	--	--	
MW-8	10/1/2009	56.56	--	10.28	46.28	--	380	76 J	--	94 J	--	--	--	--	--	--	--	--	--	
MW-8	10/8/2009	56.56	--	10.51	46.05	--	620	89 J	--	<69	--	--	--	--	--	--	--	--	--	
MW-8	10/15/2009	56.56	--	10.65	45.91	--	420	340	--	310 J	--	--	--	--	--	--	--	--	--	
MW-8	10/22/2009	56.56	--	10.60	45.96	--	480	77 J	--	<67	--	--	--	--	--	--	--	--	--	
MW-8	11/18/2009	56.56	--	9.71	46.85	--	510	140	--	<70	--	--	--	--	--	--	--	--	--	
MW-8	12/3/2009	56.56	--	8.87	47.69	--	580	--	--	--	--	<1	<1	7	28	--	--	--	--	
MW-8	12/16/2009	56.56	--	--	--	--	420	240	--	<66	--	--	--	--	--	--	--	--	--	
MW-8	1/27/2010	56.56	--	8.90	47.66	--	790	--	190	--	<69	--	--	--	--	--	--	--	--	
MW-8	2/12/2010	56.56	--	8.98	47.58	--	570	--	180	--	<70	--	--	--	--	--	--	--	--	
MW-8	3/30/2010	56.56	--	8.45	48.11	--	710	--	91	--	<70	--	--	--	--	--	--	--	--	
MW-8	6/18/2010	56.56	--	8.32	48.24	--	**1,000**	--	390	--	380	--	--	--	--	--	--	--	--	
MW-8	9/2/2010	56.56	--	9.87	46.69	--	390 J	290	--	330	--	--	--	--	--	--	--	--	--	
MW-8	12/7/2010	56.56	--	9.81	46.75	--	610	--	309	--	470	--	--	--	--	--	--	--	--	
MW-8	3/7/2011	56.56	--	7.46	49.10	--	520	--	**590**	--	**530**	--	--	--	--	--	--	--	--	
MW-8	6/9/2011	56.56	--	6.95	49.61	--	280	--	**19,000**	--	<3,500	--	--	--	--	--	--	--	--	
MW-8	9/16/2011	56.56	--	8.48	48.08	--	500	--	76	--	170	--	--	--	--	--	--	--	--	
MW-8	12/13/2011	56.56	--	9.10	47.46	--	460	--	66	--	130	--	--	--	--	--	--	--	--	
MW-8	12/19/2011	56.56	--	9.02	47.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/15/2012	56.56	--	9.70	46.86	--	<50	--	<29	--	<68	--	--	--	--	--	--	--	--	
MW-8	6/13/2012	56.56	--	7.35	49.21	--	330	--	430	--	**610**	--	--	--	--	--	--	--	--	In analyzing HO w/ silica gel, the observed sample pattern includes #2 fuel/diesel, eluting in the DRO range later than #2 fuel.
MW-8	9/10/2012	56.56	--	8.80	47.76	--	220	--	<30	--	<69	--	--	--	--	--	--	--	--	
MW-8	12/10/2012	56.56	--	8.05	48.51	--	630	--	220	--	310	--	--	--	--	--	--	--	--	
MW-8	3/11/2013	56.56	--	7.24	49.32	--	510	--	**580**	--	**830**	--	--	--	--	--	--	--	--	In analyzing HO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes later in the DRO range.
MW-8	6/12/2013	56.56	--	7.43	49.13	--	610	200	--	360	--	--	--	--	--	--	--	--	--	
MW-8	9/18/2013	56.56	--	8.82	47.74	--	380	48	--	96	--	--	--	--	--	--	--	--	--	
MW-8	12/11/2013	56.56	--	8.36	48.20	--	500	100	--	190	--	--	--	--	--	--	--	--	--	
MW-8	3/12/2014	56.56	--	7.02	49.54	--	--	**500**	--	**510**	--	--	--	--	--	--	--	--	--	In analyzing HO, the observed sample pattern includes #2 fuel/diesel and additional patterns that elute earlier and later in the DRO range.
MW-8	9/27/2014	56.56	--	8.86	47.70	--	--	**16,000**	--	--	--	--	--	--	--	--	--	--	--	
MW-8	8/18/2020	56.56	--	9.02	47.54	--	**6,210**	123 J	--	<83.3	--	<0.0941	<0.278	1.64	1.16 J	--	--	<2.95	--	
MW-8	9/28/2021	56.52	--	10.38	46.14	--	**3,600**	305	--	<250	--	<1.00	<1.00	1.11	0.574 J	<1.00	--	<6.00		
MW-8	12/15/2021	56.52	--	7.83	48.69	--	**7,270**	228	--	119 J	--	<0.0941	<0.278	2.13	1.75 J	<0.101	<2.99	--	--	
MW-8	2/16/2022	56.52	--	7.48	49.04	--	**3,300**	126 J	--	<83.3	--	<0.0941	<0.278	0.584 J	0.973 J	<0.101	<0.849	--	--	
MW-8	6/6/2022	56.52	--	7.55	48.97	--	**6,420**	170 J	--	<83.3	--	<0.0941	<0.278	0.488 J	<0.101	<0.101	<0.849	--	--	
MW-8	9/27/2022	56.52	--	9.52	47.00	--	**9,280**	104 J	--	159 J	--	<1.00	<1.00	0.821 J	0.589 J	<1.00	<2.00	--	--	
MW-8	1/6/2023	56.52	--	8.91	47.61	--	**7,440**	122 J	--	<250	--	<1.00	0.303 J	1.73	1.57 J	<1.00	<2.00	--	--	
MW-8	3/22/2023	56.52	--	8.75	47.77	--	**9,990**	114 J	--	<250	--	<1.00	0.304 J	1.55	0.971 J	<1.00	<2.00	--	--	
MW-8	6/21/2023	56.52	--	9.58	46.94	--	**5,860**	172 J	--	<250	--	<1.00	0.450 J	1.19	0.689 J	<1.00	1.02 J	--	--	
MW-8	9/11/2023	56.52	--	10.81	45.71	--	**2,220**	**527**	--	<83.3	--	0.224 J	0.369 J	0.830 J	0.734 J	<0.101	<0.849	--	--	
MW-8	12/13/2023	56.52	--	10.10	46.42	--	**4,010**	431	--	<83.3	--	<0.0941	<0.278	1.91	1.76 J	<0.101	<0.849	--	--	
MW-8	2/20/2024	56.52	--	9.24	47.28	--	**4,000**	418	--	87.8 J	--	3.41	0.757 J	1.57	3.33	<0.101	<0.849	--	--	
MW-8	6/11/2024	56.52	--	9.43	47.09	--	**4,500 [6,880]**	157 J [183 J]	-- [--]	<83.3 [<83.3]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	2.13 [2.14]	2.28 J [2.27 J]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-8	9/16/2024	56.52	--	9.52	47.00	--	**6,670**	207	--	<83.3	--	<0.0941	0.297 J	1.17	0.756 J	<0.101	<0.849	--	--	
MW-9	1/29/1992	--	--	--	--	--	ND	**1,000**	--	ND	--	1.0	1.0	ND	4.0	--	--	--	--	
MW-9	9/25/1992	57.79	--	--	--	--	370	**1,970**	--	ND	--	1.2	ND	1.0	2.0	--	--	--	--	
MW-9	2/24/1993	57.79	--	10.07	47.72	--	439	**2,340**	--	ND	--	**27**	ND	ND	1.0	--	--	--	--	
MW-9	5/17/1993	57.79	--	9.75	48.04	--	330	**770**	--	ND	--	**5.9**	1.0	ND	2.0	--	--	--	--	
MW-9	8/2/1993	57.79	--	10.20	47.59	--	--	**1,560**	--	ND	--	--	--	--	--	--	--	--	--	
MW-9	8/24/1993	57.79	--	--	--	--	**5,590**	--	--	--	--	4.0	14	12	409	--	--	--	--	
MW-9	11/3/1993	57.79	--	11.43	46.36	--	**1,070**	**990**	--	ND	--	1.9	1.0	ND	2.0	--	--	--	--	
MW-9	2/15/1994	57.79	--	11.27	46.52	--	**853**	**750**	--	ND	--	2.1	ND	ND	2.0	--	--	--	--	
MW-9	5/20/1994	57.79	--	10.75	47.04	--	740	**1,610**	--	ND	--	0.6	ND	ND	ND	--	--	--	--	
MW-9	8/23/1994	57.79	--	11.69	46.10	--	640	**1,220**	--	ND	--	0.7	ND	ND	ND	--	--	--	--	
MW-9	11/16/1994	57.79	--	10.88	46.91	--	ND	300	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-9	2/10/1995	57.79	--	10.94	46.85	--	**950**	**890**	--	400	--	ND	ND	1.5	6.0	--	--	ND	--	
MW-9	5/12/1995	57.79	--	10.49	47.30	--	**910**	**740**	--	ND	--	ND	ND	ND	ND	--	--	ND	--	
MW-9	8/11/1995	57.79	--	11.14	46.65	--	**1,200**	**1,800**	--	ND	--	0.63	ND	ND	1.2	--	--	ND	--	
MW-9	11/2/1995	57.79	--	11.49	46.30	--	**990**	**980**	--	ND	--	0.68	ND	ND	ND	--	--	3.5	--	
MW-9	1/31/1996	57.79	--	8.98	48.81	--	740	**710**	--	ND	--	2.6	ND	ND	ND	--	--	--	--	
MW-9	5/9/1996	57.79	--	9.31	48.48	--	128	477	--	ND	--	ND	0.74	ND	ND	--	--	--	--	
MW-9	2/3/1997	57.79	--	7.70	50.09	--	190	355	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-9	8/5/1997	57.79	--	9.85	47.94	--	236	447	--	ND	--	ND	ND	ND	ND	--	--	--	--	
MW-9	2/11/1998	57.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/27/1998	57.79	--	10.72	47.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	1/19/1999	57.79	--	8.87	48.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/30/1999	57.79	--	10.18	47.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	3/13/2000	57.79	--	9.13	48.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	9/19/2000	57.79	--	10.41	47.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	3/20/2001	57.79	--	10.07	47.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/21/2001	57.79	--	10.79	47.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well Decommissioned
MW-10	12/16/2002	--	--	10.41	--	--	**1,800**	--	<250	--	<250	**<10***	3.5	31	98	9.3	<8.90	--	--	
MW-10	3/6/2003	--	--	9.74	--	--	99	--	<250	--	<250	<1.0	<0.50	<0.50	<1.5	<2.5	--	--	--	
MW-10	6/4/2003	--	--	9.28	--	--	<50	--	<320	--	<400	2.4	<0.5	2.4	<1.5	<2.5	--	--	--	
MW-10	9/11/2003	--	--	11.18	--	--	**12,000**	--	330	--	<250	**71**	380	430	**1,500**	<10	--	--	--	
MW-10	12/17/2003	--	--	9.15	--	--	<50/<50	--	<250/<250	--	<250/<250	<0.5/2.8	<0.5/1.4	<0.5/1.5	<1.5/1.8	<2.5/<2.5	--	--	--	
MW-10	6/11/2004	--	--	8.95	--	--	<50	--	**<800**	--	<1,000	2.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-10	9/21/2004	--	--	8.90	--	--	120	--	<250	--	<250	**9.6**	0.8	1.2	<1.5	<5.0	--	--	--	
MW-10	12/21/2004	--	--	8.61	--	--	780	--	<250	--	<250	**27**	19	13	25	<5.0	--	--	--	
MW-10	7/2/2005	56.21	--	8.98	47.23	--	**1,100**	--	470	--	<500	**8**	6	10	190	<0.5	1.3	**<0.5***		
MW-10	9/15/2005	56.21	--	9.48	46.73	--	**17,000**	--	**980**	--	280	**32**	**1,200**	520	**2,600**	<1	--	<0.87	--	
MW-10	12/31/2005	56.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-10	3/11/2006	56.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-10	6/13/2006	56.21	--	8.98	47.23	--	**2,800**	--	**670**	--	<210	4	68	92	360	<0.5	<0.51	1.3	--	
MW-10	8/10/2006	56.21	--	9.53	46.68	--	**16,000**	**620**	--	<100	--	**6**	330	390	**1,600**	<1	0.4	1	--	
MW-10	12/5/2006	56.21	--	10.03	46.18	--	**22,000**	**1,400**	--	**530**	--	**15**	380	**700**	**3,800**	<10	0.57 BJ	2.6 B	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-10	1/24/2007	56.21	--	9.30	46.91	--	**12,000**	**1,300**	--	<260	--	**7.7**	48	310	**1,450**	<5.0	<2.0	<2.0	--	
MW-10	5/8/2007	56.21	--	9.41	46.80	--	**13,000**	**610**	--	--	--	**<10**	370	350	**1,790**	<10	<2.0	<2.0	--	
MW-10	6/4/2007	56.21	--	9.24	46.97	--	**15,000**	--	320	<100	--	**6**	160	370	**1,900**	<1	--	1.2	**<1***	
MW-10	9/5/2007	56.21	--	10.50	45.71	--	**13,000**	--	480	--	<110	3	210	340	**1,400**	<1	--	0.88	**<1***	
MW-10	12/19/2007	56.21	--	10.45	45.76	--	**8,700**	--	**530**	--	<200	**14**	44	250	850	<0.5	--	1.9	**<0.5***	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel.
MW-10	3/6/2008	56.21	--	9.08	47.13	--	**2,100**	--	140	--	<100	**7**	29	61	210	<0.5	--	--	**<0.5***	
MW-10	6/16/2008	56.21	--	8.62	47.59	--	**1,500**	--	410	--	<100	0.6	44	51	190	<0.5	--	--	**<0.5***	
MW-10	9/11/2008	56.21	--	8.77	47.44	--	**7,000**	--	92	--	<99	2	140	170	**1,000**	<0.5	--	--	**<0.5***	
MW-10	11/20/2008	56.21	--	9.01	47.20	--	**7,700**	--	150	--	<69	<3	83	190	**1,300**	<3	--	--	**<3***	
MW-10	3/4/2009	56.21	--	7.86	48.35	--	**3,600**	--	85	--	<69	0.9	38	95	390	<0.5	--	--	**<0.5***	
MW-10	6/4/2009	56.21	--	8.10	48.11	--	**5,000**	--	<300	--	<700	2	73	170	440	<0.5	--	--	**<0.5***	
MW-10	9/22/2009	56.21	--	10.03	46.18	--	**15,000**	**610**	--	<81	--	--	--	--	--	--	--	--	--	
MW-10	9/24/2009	56.21	--	10.04	46.17	--	**22,000**	**800**	--	150 J	--	--	--	--	--	--	--	--	--	
MW-10	10/1/2009	56.21	--	10.44	45.77	--	**14,000**	460	--	<66	--	--	--	--	--	--	--	--	--	
MW-10	10/8/2009	56.21	--	10.64	45.57	--	**13,000**	330	--	<69	--	--	--	--	--	--	--	--	--	
MW-10	10/15/2009	56.21	--	10.80	45.41	--	**17,000**	**560**	--	<66	--	--	--	--	--	--	--	--	--	
MW-10	10/22/2009	56.21	--	10.82	45.39	--	**12,000**	420	--	<68	--	--	--	--	--	--	--	--	--	
MW-10	11/18/2009	56.21	--	10.14	46.07	--	**11,000**	36 J	--	<72	--	--	--	--	--	--	--	--	--	
MW-10	12/3/2009	56.21	--	9.28	46.93	--	**5,600**	--	350	--	<67	2	33	200	480	<0.5	--	--	**<0.5***	
MW-10	12/16/2009	56.21	--	--	--	--	**2,800**	140	--	<69	--	--	--	--	--	--	--	--	--	
MW-10	1/27/2010	56.21	--	8.81	47.40	--	**2,000**	--	210	--	<70	--	--	--	--	--	--	--	--	
MW-10	2/12/2010	56.21	--	8.83	47.38	--	**1,800**	--	120	--	<69	--	--	--	--	--	--	--	--	
MW-10	3/30/2010	56.21	--	8.80	47.41	--	130	--	44	--	<69	--	--	--	--	--	--	--	--	
MW-10	6/18/2010	56.21	--	8.55	47.66	--	120	--	63	--	<69	<0.5	<0.5	4	2	--	--	--	--	
MW-10	9/2/2010	56.21	--	10.01	46.20	--	**3,900**	380	--	120	--	2	7	140	260	--	--	--	--	
MW-10	12/7/2010	56.21	--	10.07	46.14	--	**7,600**	--	230	--	290	3	70	240	700	--	--	--	--	
MW-10	3/7/2011	56.21	--	7.79	48.42	--	700	--	170	--	340	2	3	23	22	--	--	--	--	
MW-10	6/9/2011	56.21	--	7.30	48.91	--	**3,600**	--	**6,200**	--	<340	3	40	130	370	--	--	--	--	
MW-10	9/16/2011	56.21	--	8.60	47.61	--	**5,100**	--	100	--	<68	1	13	190	370	--	--	--	--	
MW-10	12/13/2011	56.21	--	9.08	47.13	--	560	--	<60	--	<140	0.6	1	11	10	--	--	--	--	
MW-10	12/19/2011	56.21	--	9.00	47.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	3/15/2012	56.21	--	7.80	48.41	--	77	--	<30	--	<69	<0.5	<0.5	1	<0.5	--	--	--	--	
MW-10	6/13/2012	56.21	--	7.45	48.76	--	620	--	35	--	<72	0.8	6	38	15	--	--	--	--	
MW-10	9/10/2012	56.21	--	8.75	47.46	--	**4,200**	--	220	--	<68	1	35	87	220	--	--	--	--	
MW-10	12/10/2012	56.21	--	8.12	48.09	--	**1,700**	--	56	--	<69	0.6	19	31	210	--	--	--	--	
MW-10	3/11/2013	56.21	--	7.54	48.67	--	**1,200**	--	37	--	<66	0.5	6	18	48	--	--	--	--	
MW-10	6/12/2013	56.21	--	7.55	48.66	--	**1,800**	59	--	<67	--	0.9	13	47	150	--	--	--	--	
MW-10	9/18/2013	56.21	--	8.93	47.28	--	**4,000**	200	--	<67	--	0.8	17	29	330	--	--	--	--	
MW-10	12/11/2013	56.21	--	8.56	47.65	--	**3,100**	76	--	<69	--	1	10	54	140	--	--	--	--	
MW-10	3/12/2014	56.21	--	12.79	43.42	--	**1,700**	--	--	--	--	<0.5	6	28	83	--	--	--	--	
MW-10	9/27/2014	56.21	--	8.97	47.24	--	**2,300**	--	--	--	--	<0.5	<0.5	0.7	0.6	--	--	--	--	
MW-10	8/17/2020	56.21	--	9.45	46.76	--	582	222	--	<83.3	--	0.152 J	2.41	28.5	19.1	--	--	<2.95	--	
MW-10	9/29/2021	56.17	--	10.33	45.84	--	**4,150 [4150]**	**986 [1,000]**	--	<250 [<250]	--	0.230 J [0.230 J]	9.90 [9.78]	19.7 [19.4]	87 [85.6]	<1.00	--	<6.00 [<6.00]	--	
MW-10	12/15/2021	56.17	--	8.02	48.15	--	362	171 J	--	<83.3	--	<0.0941	1.54	2.16	1.39 J	<0.101	<2.99	--	--	Slight odor, no visible sheen
MW-10	2/15/2022	56.17	--	7.44	48.73	--	665 B	241	--	<83.3	--	<0.0941	1.86	4.52	2.16 J	<0.101	<0.849	--	--	
MW-10	6/7/2022	56.17	--	7.60	48.57	--	*57.8 J*	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-10	9/28/2022	56.17	--	9.70	46.47	--	**1,700**	381	--	186 J	--	0.166 J	19.9	1.81	17.8	<1.00	<2.00	--	--	
MW-10	1/5/2023	56.17	--	9.12	47.05	--	**1,760**	355	--	<250	--	<1.00 J3	13.2	7.86	31.9	<1.00	<2.00	--	--	
MW-10	3/23/2023	56.17	--	8.91	47.26	--	197 B	<200	--	<250	--	<1.00	<1.00	<1.00	0.221 J	<1.00	<2.00	--	--	
MW-10	6/21/2023	56.17	--	8.82	47.35	--	88.0 B J	<200	--	<250	--	<1.00	0.334 J	<1.00	<3.00	<1.00	1.51 J	--	--	
MW-10	9/12/2023	56.17	--	10.84	45.33	--	**2,100**	**515**	--	<83.3	--	0.222 J	21.9	1.11	17.5	<0.101	<0.849	--	--	
MW-10	12/13/2023	56.17	--	9.04	47.13	--	**2,950**	**561**	--	<83.3	--	<0.0941	22.6	1.36	31.5	<0.101	<0.849	--	--	
MW-10	2/21/2024	56.17	--	9.55	46.62	--	**4,820**	**634**	--	<83.3	--	0.254 J	22.8	2.89	21.7	<0.101	<0.849	--	--	
MW-10	6/10/2024	56.17	--	9.03	47.14	--	171	76.8 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-10	9/17/2024	56.17	--	9.45	46.72	--	464	194 J	--	<83.3	--	<0.0941	5.32	<0.137	2.23 J	<0.101	<0.849	--	--	
MW-11	12/16/2002	--	--	11.68	--	--	**22,000**	--	430	--	<250	**170**	980	**740**	**3,000**	**70**	<8.90	--	--	
MW-11	3/6/2003	--	--	10.34	--	--	**19,000**	--	**790**	--	280	**150**	70	680	**2,300**	**<50***	--	--	--	
MW-11	6/4/2003	--	--	9.83	--	--	**16,000**	--	**600**	--	<250	**88**	590	480	**2,100**	**<20***	--	--	--	
MW-11	9/11/2003	--	--	10.26	--	--	63	--	<250	--	<250	<0.5	<0.5	<0.5	<1.5	<2.5	--	--	--	
MW-11	12/17/2003	--	--	9.61	--	--	**5,300/83**	--	260/<250	--	<250/<250	**46/1.4**	67/0.8	220/3.9	770/9.4	**21/<2.5**	--	--	--	
MW-11	6/11/2004	--	--	9.12	--	--	**4,700**	--	**<800***	--	<1,000	**35**	19	190	520	<2.5	--	--	--	
MW-11	9/21/2004	--	--	9.42	--	--	**3,800**	--	<250	--	<250	**28**	28	140	540	<10	--	--	--	
MW-11	12/21/2004	--	--	8.46	--	--	**1,400**	--	<250	--	<250	**19**	7.6	65	93	<2.5	--	--	--	
MW-11	7/2/2005	56.32	--	9.32	47.00	--	**1,100**	--	410	--	<100	**7**	3	29	110	<1	--	0.98	**<1***	
MW-11	9/15/2005	56.32	--	10.38	45.94	--	**2,800**	--	<400	--	<500	**15**	10	170	360	<0.5	--	<0.87	--	
MW-11	12/31/2005	56.32	--	10.31	46.01	--	**8,700**	--	350	--	<200	**29**	140	310	**1,000**	<0.5	<0.87	<0.87	--	
MW-11	3/11/2006	56.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well inaccessible
MW-11	6/13/2006	56.32	--	11.68	44.64	--	**3,500**	--	**510**	--	<99	**26**	15	170	350	<0.5	<0.51	<0.51	--	
MW-11	8/10/2006	56.32	--	10.20	46.12	--	**3,700**	150	--	<110	--	**13**	11	<0.5	330	<0.5	<0.047	0.5	--	
MW-11	12/5/2006	56.32	--	10.67	45.65	--	**6,500**	**730**	--	100 J	--	**36**	21	270	894	<10	0.085 BJ	0.49 BJ	--	
MW-11	1/24/2007	56.32	--	9.85	46.47	--	**4,300**	320	--	<300	--	**28**	14	180	557	<5.0	<2.0	<2.0	--	
MW-11	5/8/2007	56.32	--	10.07	46.25	--	420	<130	--	--	--	3.1	<2.0	21	12	<2.0	<2.0	<2.0	--	
MW-11	6/4/2007	56.32	--	9.85	46.47	--	**950**	<400	--	<500	--	**5**	2	53	82	<1	--	1	**<1***	
MW-11	9/5/2007	56.32	--	11.13	45.19	--	**1,000**	--	250	--	<96	**10**	5	35	41	<2	--	0.45	**<2***	
MW-11	12/19/2007	56.32	--	10.85	45.47	--	**1,300**	--	**1,800**	--	**<1,000***	**12**	12	46	82	<1	--	0.1	**<1***	
MW-11	3/6/2008	56.32	--	9.48	46.84	--	270	--	<79	--	<98	0.8	1	20	36	<0.5	--	--	**<0.5***	
MW-11	6/16/2008	56.32	--	8.43	47.89	--	<50	--	<81	--	<100	<0.5	<0.5	0.6	<0.5	<0.5	--	--	**<0.5***	
MW-11	9/11/2008	56.32	--	8.85	47.47	--	94	--	<79	--	<99	<0.5	<0.5	4	3	<0.5	--	--	**<0.5***	
MW-11	11/20/2008	56.32	--	9.82	46.50	--	740	--	45	--	<69	<0.5	2	40	62	<0.5	--	--	**<0.5***	
MW-11	3/4/2009	56.32	--	7.89	48.43	--	710	--	95	--	<68	0.9	5	37	58	<0.5	--	--	**<0.5***	
MW-11	6/4/2009	56.32	--	8.10	48.22	--	210	--	<300	--	**<700***	0.5	1	6	8	<0.5	--	--	**<0.5***	
MW-11	9/22/2009	56.32	--	11.05	45.27	--	**2,500**	110	--	<66	--	--	--	--	--	--	--	--	--	
MW-11	9/24/2009	56.32	--	11.17	45.15	--	**1,900**	130	--	<66	--	--	--	--	--	--	--	--	--	
MW-11	10/1/2009	56.32	--	11.31	45.01	--	**2,900**	74 J	--	<66	--	--	--	--	--	--	--	--	--	
MW-11	10/8/2009	56.32	--	11.42	44.90	--	**2,100**	63 J	--	<68	--	--	--	--	--	--	--	--	--	
MW-11	10/15/2009	56.32	--	11.57	44.75	--	**3,200**	150	--	<69	--	--	--	--	--	--	--	--	--	
MW-11	10/22/2009	56.32	--	11.46	44.86	--	**2,900**	100 J	--	<70	--	--	--	--	--	--	--	--	--	
MW-11	11/18/2009	56.32	--	10.64	45.68	--	**3,100**	140	--	<70	--	--	--	--	--	--	--	--	--	
MW-11	12/3/2009	56.32	--	9.77	46.55	--	**2,300**	--	130	--	<68	**3**	8	130	320	<0.5	--	--	**<0.5***	
MW-11	12/16/2009	56.32	--	--	--	--	**3,600**	130	--	<70	--	--	--	--	--	--	--	--	--	
MW-11	1/27/2010	56.32	--	9.35	46.97	--	**5,000**	--	200	--	<64	--	--	--	--	--	--	--	--	
MW-11	2/12/2010	56.32	--	9.46	46.86	--	**3,800**	--	220	--	<70	--	--	--	--	--	--	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-11	3/30/2010	56.32	--	9.42	46.90	--	**5,000**	--	150	--	<69	--	--	--	--	--	--	--	--	
MW-11	6/18/2010	56.32	--	8.72	47.60	--	670	--	75	--	<69	2	2	16	66	--	--	--	--	
MW-11	9/2/2010	56.32	--	10.59	45.73	--	**2,900**	200	--	<69	--	3	8	130	330	--	--	--	--	
MW-11	12/7/2010	56.32	--	10.38	45.94	--	**2,500**	--	130	--	<70	3	7	120	270	--	--	--	--	
MW-11	3/7/2011	56.32	--	7.91	48.41	--	**1,300**	--	61	--	<69	0.9	3	61	65	--	--	--	--	
MW-11	6/9/2011	56.32	--	7.35	48.97	--	**1,400**	--	**67,000**	--	**<6,800***	2	5	68	62	--	--	--	--	
MW-11	9/16/2011	56.32	--	8.70	47.62	--	**850**	--	34	--	<68	2	3	39	22	--	--	--	--	
MW-11	12/13/2011	56.32	--	9.75	46.57	--	**1,800**	--	49	--	<68	3	5	97	160	--	--	--	--	
MW-11	12/19/2011	56.32	--	9.62	46.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	3/15/2012	56.32	--	7.95	48.37	--	**1,500**	--	<30	--	<70	3	3	78	94	--	--	--	--	
MW-11	6/13/2012	56.32	--	7.55	48.77	--	**2,200**	--	57	--	<70	**7**	7	160	180	--	--	--	--	
MW-11	9/10/2012	56.32	--	8.94	47.38	--	**1,300**	--	<300	--	**<700***	<5	<5	24	31	--	--	--	--	
MW-11	12/10/2012	56.32	--	8.40	47.92	--	**1,700**	--	94	--	<68	**6**	6	63	120	--	--	--	--	
MW-11	3/11/2013	56.32	--	7.56	48.76	--	**3,200**	--	88	--	<70	**7**	9	150	190	--	--	--	--	
MW-11	6/12/2013	56.32	--	7.68	48.64	--	**3,600**	98	--	<66	--	**9**	12	190	250	--	--	--	--	
MW-11	9/18/2013	56.32	--	9.53	46.79	--	**4,000**	210	--	<66	--	**6**	9	170	230	--	--	--	--	
MW-11	12/11/2013	56.32	--	9.04	47.28	--	**2,700**	100	--	<67	--	4	7	140	210	--	--	--	--	
MW-11	3/12/2014	56.32	--	12.88	43.44	--	**5,100**	--	--	--	--	**7**	14	260	340	--	--	--	--	
MW-11	9/27/2014	56.32	--	9.51	46.81	--	**2,200**	--	--	--	--	<0.5	<0.5	0.8	<0.5	--	--	--	--	
MW-11	8/17/2020	56.32	--	9.14	47.18	--	**5,650**	**724**	--	<83.3	--	3.76	<0.278	4.91	2.28 J	--	<2.95	--	--	
MW-11	9/29/2021	57.20	--	10.78	46.42	--	**4,190**	**543**	--	<250	--	3.03	1.78	67.9	4.36	<1.00	--	<6.00		
MW-11	12/15/2021	57.20	--	8.15	49.05	--	457	129 J	--	<83.3	--	0.896 J	0.343 J	5.67	0.609 J	<0.101	<2.99	--	--	
MW-11	2/15/2022	57.20	--	7.51	49.69	--	228	97.9 J	--	<83.3	--	1.30	0.339 J	1.60	0.234 J	<0.101	<0.849	--	--	
MW-11	6/7/2022	57.20	--	7.62	49.58	--	315 B	<66.7	--	<83.3	--	1.63	0.299 J	<0.137	<0.174	<0.101	<0.849	--	--	
MW-11	9/28/2022	57.20	--	9.82	47.38	--	**3,580 [3,340]**	348 [320]	-- [--]	<250 [<250]	-- [--]	2.08 [2.17]	1.13 [1.17]	6.22 [6.16]	2.88 J [2.57 J]	<1.00 [<1.00]	<2.00 [<2.00]	-- [--]	-- [--]	
MW-11	1/5/2023	57.20	--	8.73	48.47	--	**3,510 [3,550]**	378 [383]	-- [--]	<250 [<250]	-- [--]	0.995 J [1.05]	0.939 J [0.943 J]	22.0 [23.6]	2.44 J [2.31 J]	<1.00 [<1.00]	<2.00 [<2.00]	-- [--]	-- [--]	
MW-11	3/23/2023	57.20	--	9.03	48.17	--	**4,880**	188 J	--	<250	--	1.65	1.15	26.9	3.26	<1.00	<2.00	--	--	
MW-11	6/21/2023	57.20	--	9.69	47.51	--	**3,650**	376	--	<250	--	1.71	0.946 J	25.3 J3	2.15 J	<1.00	<2.00	--	--	
MW-11	9/12/2023	57.20	--	10.84	46.36	--	**8,700 [6,290]**	**711 [645]**	-- [--]	<83.3 [<83.3]	-- [--]	1.31 [1.29]	2.85 [3.00]	104 [99.8]	0.195 J [3.81]	<0.101 [<0.101]	<0.849 [1.70 B J]	-- [--]	-- [--]	
MW-11	12/13/2023	57.20	--	11.31	45.89	--	**5,940**	**918**	--	<83.3	--	<0.941	3.13 J	132	30.9	<1.01	<0.849	--	--	
MW-11	2/21/2024	57.20	--	9.68	47.52	--	**3,490**	**970**	--	<83.3	--	<0.941	<2.78	38.8	9.50 J	<1.01	<0.849	--	--	
MW-11	6/10/2024	57.20	--	8.91	48.29	--	234	105 J	--	<83.3	--	0.159 J	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-11	9/17/2024	57.20	--	9.82	47.38	--	**3,670**	**737**	--	<83.3	--	1.59	1.13	5.92	2.17 J	<0.101	<0.849	--	--	
MW-12	8/10/2006	--	--	9.23	--	--	**89,000**	**62,000**	--	<21,000	--	4	230	**990**	**4,400**	<3	4.3	**164**	--	
MW-12	12/5/2006	--	--	9.04	--	--	**14,000**	**3,700**	--	76 J	--	1.6	52	280	**1,390**	<1.0	4.2 J	**20 B**	--	
MW-12	1/24/2007	--	--	8.24	--	--	**9,500**	**1,600**	--	<250	--	<5.0	34	89	**1,140**	<5.0	11	**65**	--	
MW-12	5/8/2007	--	--	8.59	--	--	**9,400**	**1,400**	--	--	--	3.2	61	77	540	<2.0	2	14	--	
MW-12	6/4/2007	56.79	--	9.05	47.74	--	**12,000**	**330,017**	--	<100	--	<3	19	120	560	<3	--	7.9	**<3***	
MW-12	9/5/2007	56.79	--	10.18	46.61	--	**3,100**	--	**2,900**	--	<110	<0.5	1	31	55	<0.5	--	2.5	**<0.5***	
MW-12	12/19/2007	56.79	--	9.72	47.07	--	**2,200**	--	**6,800**	--	<490	<0.5	0.5	24	19	<0.5	--	13.4	**<0.5***	In analyzing DRO w/ silica gel, the observed sample pattern includes #2 fuel/diesel and an additional pattern that elutes earlier in the DRO range.
MW-12	3/6/2008	56.79	--	8.56	48.23	--	**7,100**	--	**1,500**	--	<100	**12**	250	180	**1,100**	<0.5	--	--	**<0.5***	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel.
MW-12	6/16/2008	56.79	7.98	8.03	48.80	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/11/2008	56.79	8.12	8.17	48.66	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	11/20/2008	56.79	8.15	8.27	48.62	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	3/4/2009	56.79	7.52	7.56	49.26	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	6/4/2009	56.79	7.74	7.80	49.04	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/22/2009	56.79	9.51	10.21	47.14	0.70		--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/23/2009	56.79	--	12.68	44.11	--	**980,000**	**460,000**	--	**530,000**	--	--	--	--	--	--	--	--	--	
MW-12	9/24/2009	56.79	--	9.81	46.98	--	**44,000**	**30,000**	--	**35,000**	--	--	--	--	--	--	--	--	--	
MW-12	10/1/2009	56.79	--	10.23	46.56	--	**12,000 J**	**5,000**	--	**25,000**	--	--	--	--	--	--	--	--	--	
MW-12	10/8/2009	56.79	--	10.47	46.32	--	**3,700**	**3,800**	--	**14,000**	--	--	--	--	--	--	--	--	--	
MW-12	10/15/2009	56.79	--	10.60	46.19	--	**3,400**	**1,900 J**	--	**4800 J**	--	--	--	--	--	--	--	--	--	
MW-12	10/22/2009	56.79	--	10.45	46.34	--	**4,900**	**810 J**	--	**2,800**	--	--	--	--	--	--	--	--	--	
MW-12	11/18/2009	56.79	--	9.66	47.13	--	**3,200**	**1,400 J**	--	**1,800 J**	--	--	--	--	--	--	--	--	--	
MW-12	12/3/2009	56.79	--	8.80	47.99	--	**5,900**	--	**7,600**	--	**3,400**	**<10***	11	35	260	<10	--	--	**<10***	
MW-12	12/16/2009	56.79	--	--	--	--	**4,500**	**2,200**	--	**4,300**	--	--	--	--	--	--	--	--	--	
MW-12	1/27/2010	56.79	--	8.93	47.86	--	**9,900**	--	**15,000**	--	**<1,800***	--	--	--	--	--	--	--	--	
MW-12	2/12/2010	56.79	--	9.00	47.79	--	**5,100**	--	**5,000**	--	450	--	--	--	--	--	--	--	--	In analyzing DRO w/ silica gel, the observed sample pattern is not typical of #2 fuel/diesel.
MW-12	3/30/2010	56.79	--	8.35	48.44	--	**4,900**	--	**5,800**	--	<350	--	--	--	--	--	--	--	--	
MW-12	6/18/2010	56.79	--	8.39	48.40	--	**6,900**	--	**4,600**	--	<360	<0.5	5	82	290	--	--	--	--	
MW-12	9/2/2010	56.79	--	9.87	46.92	--	**2,600**	**5,100**		<350	--	<0.5	1	29	29	--	--	--	--	
MW-12	12/7/2010	56.79	--	9.74	47.05	--	**5,000**	--	**2,700**	--	150	<0.5	0.9	28	37	--	--	--	--	
MW-12	3/7/2011	56.79	--	7.53	49.26	--	110	--	**2,200**	--	270	<0.5	<0.5	0.9	3	--	--	--	--	
MW-12	6/9/2011	56.79	--	7.14	49.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/16/2011	56.79	--	8.53	48.26	--	**3,100**	--	**1,300**	--	<68	<0.5	0.5	15	48	--	--	--	--	
MW-12	12/13/2011	56.79	--	9.05	47.74	--	**3,800**	--	330	--	<69	<0.5	<0.5	10	16	--	--	--	--	
MW-12	12/19/2011	56.79	--	8.96	47.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	3/15/2012	56.79	--	9.77	47.02	--	<50	--	320	--	<82	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	6/13/2012	56.79	--	7.40	49.39	--	<50	--	110	--	<67	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	9/10/2012	56.79	--	8.35	48.44	--	**3,200**	--	**5,800**	--	<68	<0.5	<0.5	9	4	--	--	--	--	
MW-12	12/10/2012	56.79	--	7.84	48.95	--	150	--	81	--	<69	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	3/11/2013	56.79	--	7.13	49.66	--	150	--	120	--	<66	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	6/12/2013	56.79	--	7.32	49.47	--	310	**540**	--	<67	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	9/18/2013	56.79	--	8.68	48.11	--	**1,500**	**1,500**	--	<66	--	<0.5	<0.5	1	0.9	--	--	--	--	
MW-12	12/11/2013	56.79	--	8.24	48.55	--	97	110	--	<66	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	3/12/2014	56.79	--	7.72	49.07	--	130	280	--	<70	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	9/27/2014	56.79	--	8.70	48.09	--	<50	<30	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-12	8/17/2020	56.79	--	9.09	47.70	--	175 B	144 J	--	<83.3	--	<0.0941	0.473 J	0.440 J	0.803 J	--	--	<2.95	--	
MW-12	9/28/2021	56.72	--	10.28	46.44	--	143	190 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00		
MW-12	12/16/2021	56.72	--	7.83	48.89	--	<31.6	83.6 J	--	101 J		<0.0941	<0.278	<0.137	<0.174	<0.101	<2.99	--	--	
MW-12	2/16/2022	56.72	--	7.56	49.16	--	72.4 B J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	0.262 J	<0.101	<0.849	--	--	
MW-12	6/7/2022	56.72	--	7.66	49.06	--	54.6 B J	<66.7	--	243 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-12	9/28/2022	56.72	--	9.62	47.10	--	<100	137 J	--	203 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-12	1/6/2023	56.72	--	9.31	47.41	--	88.2 B J	145 J	--	84.9 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-12	3/22/2023	56.72	--	8.85	47.87	--	<100 [<100]	77.1 J [<200]	-- [--]	<250 [<250]	-- [--]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<1.00 [<1.00]	<2.00 [<2.00]	-- [--]	-- [--]	
MW-12	6/20/2023	56.72	--	9.64	47.08	--	42.6 J	103 J	--	<250	--	<1.00	<1.00	<1.00 J3	<3.00	<1.00	1.26 J	--	--	
MW-12	9/12/2023	56.72	--	10.74	45.98	--	214	120 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	1.28 B J	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-12	12/14/2023	56.72	--	10.14	46.58	--	274 B [58.2 B J]	**613** [80.5 J]	-- [--]	<83.3 [88.4 J]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-12	2/21/2024	56.72	--	9.32	47.40	--	131 B J3	138 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-12	6/11/2024	56.72	--	9.79	46.93	--	71.7 B J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-12	9/17/2024	56.72	--	9.49	47.23	--	61.5 B J	164 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-13	8/10/2006	--	--	9.83	--	--	**15,000**	**5,300**	--	<2,200	--	**5**	47	260	**1,400**	<1	4.3	**29.6**	--	
MW-13	12/5/2006	--	--	9.68	--	--	**5,000**	**1,700**	--	270	--	0.99 J	33	110	590	<1.0	1.5 BJ	**17 B**	--	
MW-13	1/24/2007	--	--	8.93	--	--	**2,300**	190	--	<260	--	1.5	21	41	242	<1.0	<2.0	**22**	--	
MW-13	5/8/2007	--	--	9.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	6/4/2007	56.71	11.15	13.00	45.19	1.85	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/5/2007	56.71	11.70	11.96	44.96	0.26	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	12/19/2007	56.71	10.51	10.83	46.14	0.32	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/6/2008	56.71	9.05	9.37	47.60	0.32	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	6/16/2008	56.71	8.25	8.49	48.41	0.24	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/11/2008	56.71	8.64	8.83	48.03	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	11/20/2008	56.71	8.77	8.94	47.91	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/4/2009	56.71	7.68	7.73	49.02	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	6/4/2009	56.71	7.94	7.99	48.76	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/22/2009	56.71	9.86	9.89	46.84	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/23/2009	56.71	--	12.98	43.73	--	**96,000**	**31,000**	--	**49,000 J**	--	--	--	--	--	--	--	--	--	
MW-13	9/24/2009	56.71	--	12.12	44.59	--	**13,000**	**3,300**	--	**<1,400***	--	--	--	--	--	--	--	--	--	
MW-13	10/1/2009	56.71	12.59	12.60	44.12	0.01	**9,700**	**8,000**	--	**500 J**	--	--	--	--	--	--	--	--	--	
MW-13	10/8/2009	56.71	--	12.46	44.25	--	**8,000**	**760**	--	350	--	--	--	--	--	--	--	--	--	
MW-13	10/15/2009	56.71	12.70	12.71	44.01	0.01	**8,400**	**930**	--	<68	--	--	--	--	--	--	--	--	--	
MW-13	10/22/2009	56.71	--	12.50	44.21	--	**6,500**	**760**	--	<68	--	--	--	--	--	--	--	--	--	
MW-13	11/18/2009	56.71	--	10.73	45.98	--	**8,900**	**1,400**	--	370	--	--	--	--	--	--	--	--	--	
MW-13	12/3/2009	56.71	--	9.68	47.03	--	**11,000**	--	**5,600**	--	**<680**	**8**	30	300	**1,400**	<0.5	--	--	**<0.5***	
MW-13	12/16/2009	56.71	--	--	--	--	**8,700**	**1,400**	--	<66	--	--	--	--	--	--	--	--	--	
MW-13	1/27/2010	56.71	--	9.45	47.26	--	**16,000**	--	**3,700**	--	**670**	--	--	--	--	--	--	--	--	
MW-13	2/12/2010	56.71	--	9.55	47.16	--	**11,000**	--	**1,700**	--	<71	--	--	--	--	--	--	--	--	
MW-13	3/30/2010	56.71	--	9.24	47.47	--	**15,000**	--	**9,300**	--	**<700***	--	--	--	--	--	--	--	--	
MW-13	6/18/2010	56.71	--	9.00	47.71	--	**10,000**	--	**3,900**	--	<350	**5**	23	360	**1,300**	--	--	--	--	
MW-13	9/2/2010	56.71	--	10.56	46.15	--	**11,000**	**3,300**	--	<350	--	**5**	23	280	**1,100**	--	--	--	--	
MW-13	12/7/2010	56.71	--	10.46	46.25	--	**9,100**	--	**770**	--	<71	2	20	200	**1,100**	--	--	--	--	
MW-13	3/7/2011	56.71	--	7.68	49.03	--	**4,200**	--	<30	--	<70	<0.5	<0.5	2	9	--	--	--	--	
MW-13	6/9/2011	56.71	--	7.20	49.51	--	**1,800**	--	160	--	<69	<0.5	0.6	10	45	--	--	--	--	
MW-13	9/16/2011	56.71	--	9.05	47.66	--	**6,400**	--	**3,000**	--	<140	3	7	160	590	--	--	--	--	
MW-13	12/13/2011	56.71	--	9.60	47.11	--	**7,600**	--	**3,600**	--	<350	<3	11	190	810	--	--	--	--	
MW-13	12/19/2011	56.71	--	9.60	47.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/15/2012	56.71	--	9.25	47.46	--	<50	--	<30	--	<70	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	6/13/2012	56.71	--	7.60	49.11	--	<50	--	<31	--	<72	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	9/10/2012	56.71	--	9.38	47.33	--	**6,000**	--	**660**	--	<68	<5	7	140	620	--	--	--	--	
MW-13	12/10/2012	56.71	--	8.28	48.43	--	**3,000**	--	**750**	--	<69	<5	<5	55	310	--	--	--	--	
MW-13	3/11/2013	56.71	--	7.42	49.29	--	**1,300**	--	490	--	<71	<0.5	0.8	18	91	--	--	--	--	
MW-13	6/12/2013	56.71	--	7.63	49.08	--	750	<29	--	<67	--	<0.5	1	23	100	--	--	--	--	
MW-13	9/18/2013	56.71	--	9.42	47.29	--	**5,500**	**500**	--	<67	--	0.6	7	170	670	--	--	--	--	
MW-13	12/11/2013	56.71	--	8.78	47.93	--	**4,500**	290	--	<67	--	<0.5	7	170	710	--	--	--	--	
MW-13	3/12/2014	56.71	--	7.14	49.57	Sheen	<50	35	--	<67	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	9/27/2014	56.71	--	9.47	47.24	--	<50	<29	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
MW-13	8/17/2020	56.71	--	9.41	47.30	--	**2,290 [2,450]**	**731 [516]**	--	<83.3 [<83.3]	--	<0.0941 [<0.0941]	0.580 J [0.535 J]	20.1 [21.2]	39.4 [39.7]	--	--	<2.95 [<2.95]	--	
MW-13	9/28/2021	56.67	--	10.73	45.94	--	**4,940 [4,530]**	**730 [752]**	--	<250 [<250]	--	0.147 J [0.194 J]	1.61 [1.56]	76.3 [73.4]	108 [122]	<1.00	--	-- [--]		
MW-13	12/15/2021	56.67	--	7.89	48.78	--	<31.6 [<31.6]	76.8 J [70.0 J]	--	84.9 J [<83.3]	--	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<2.99 [<2.99]	--	--	Slight odor on probe
MW-13	2/16/2022	56.67	--	7.69	48.98	--	65.5 B J	<66.7	--	131 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-13	6/7/2022	56.67	--	7.75	48.92	--	57.0 B J	<66.7	--	279	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-13	9/28/2022	56.67	--	9.86	46.81	--	**3,710**	**713**	--	<250	--	0.113 J	0.969 J	44.4	57.8	<1.00	<2.00	--	--	
MW-13	1/5/2023	56.67	--	9.39	47.28	--	**2,040**	**711**	--	92.9 J	--	0.109 J	0.492 J	11.1	22.2	<1.00	<2.00	--	--	
MW-13	3/23/2023	56.67	--	8.94	47.73	--	**1,330**	**584**	--	<250	--	0.125 J	0.506 J	7.44	12.5	<1.00	<2.00	--	--	
MW-13	6/20/2023	56.67	--	9.46	47.21	--	**1,290**	**739**	--	<250	--	0.117 J	0.378 J	13.1 J3	17.0	<1.00	1.53 J	--	--	
MW-13	9/11/2023	56.67	--	11.07	45.60	--	**3,490 [4,480]**	**753 [767]**	--	<83.3 [<83.3]	-- [--]	0.162 J [0.124 J]	1.55 [1.59]	63.9 [63.4]	66.7 [64.3]	<0.101 [<0.101]	1.52 B J [5.34 B]	-- [--]	-- [--]	
MW-13	12/13/2023	56.67	--	9.80	46.87	--	**2,890**	**1,090**	--	<83.3	--	<0.0941	0.880 J	30.2	39.9	<0.101	<0.849	--	--	
MW-13	2/20/2024	56.67	--	9.64	47.03	--	674 J3	**600**	--	<83.3	--	<0.0941	0.321 J	1.99	7.49	<0.101	<0.849	--	--	
MW-13	6/10/2024	56.67	--	9.32	47.35	--	<31.6	73.4 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-13	9/16/2024	56.67	--	9.83	46.84	--	**1,120**	**735**	--	<83.3	--	<0.0941	0.372 J	13.7	12.1	<0.101	<0.849	--	--	
MW-14	8/10/2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well dry
MW-14	12/5/2006	--	--	10.14	--	--	**19,000**	**1,500**	--	130 J	--	**31**	560	690	**3,300**	<10	0.055 BJ	8.1 B	--	
MW-14	1/24/2007	--	--	9.27	--	--	**32,000**	**2,300**	--	<260	--	**29**	**1,200**	**1,000**	**5,500**	**<25**	<2.0	**26**	--	
MW-14	5/8/2007	--	--	9.44	--	--	**1,700**	180	--	--	--	**6.2**	3.1	53	143	<2.0	<2.0	13	--	
MW-14	6/4/2007	56.51	--	9.58	46.93	--	**3,100**	<79	--	<98	--	**15**	7	110	290	<0.5	--	2.8	**<0.5***	
MW-14	9/5/2007	56.51	--	10.54	45.97	--	**3,000**	--	95	<100	--	**9**	17	140	370	<0.5	--	0.26	**<0.5***	
MW-14	12/19/2007	56.51	--	10.60	45.91	--	**11,000**	--	400	--	**<500***	**7**	39	240	**1,000**	<1	--	4.8	**<1***	
MW-14	3/6/2008	56.51	--	9.38	47.13	--	**2,300**	--	<160	--	<200	2	66	76	330	<0.5	--	--	**<0.5***	
MW-14	6/16/2008	56.51	--	8.78	47.73	--	200	--	<82	--	<100	2	0.6	6	14	<0.5	--	--	**<0.5***	
MW-14	9/11/2008	56.51	--	9.09	47.42	--	**1,800**	--	<79	--	<99	**9**	9	81	230	<0.5	--	--	**<0.5***	
MW-14	11/20/2008	56.51	--	9.31	47.20	--	**3,900**	--	120	--	<69	**12**	13	120	420	<0.5	--	--	**<0.5***	
MW-14	3/4/2009	56.51	--	8.14	48.37	--	**5,400**	--	450	--	<69	**21**	21	170	480	<1	--	--	**<1***	
MW-14	6/4/2009	56.51	--	8.39	48.12	--	520	--	<300	--	**<700***	3	1	10	27	<0.5	--	--	**<0.5***	
MW-14	9/22/2009	56.51	--	10.23	46.28	--	**7,300**	210	--	140 J	--	--	--	--	--	--	--	--	--	
MW-14	9/24/2009	56.51	--	10.30	46.21	--	**9,500**	**560 J**	--	**<700***	--	--	--	--	--	--	--	--	--	
MW-14	10/1/2009	56.51	--	10.68	45.83	--	**12,000**	270	--	<67	--	--	--	--	--	--	--	--	--	
MW-14	10/8/2009	56.51	--	10.80	45.71	--	**11,000**	220	--	<67	--	--	--	--	--	--	--	--	--	
MW-14	10/15/2009	56.51	--	10.94	45.57	--	**14,000**	370	--	<66	--	--	--	--	--	--	--	--	--	
MW-14	10/22/2009	56.51	--	10.94	45.57	--	**15,000**	260	--	<66	--	--	--	--	--	--	--	--	--	
MW-14	11/18/2009	56.51	--	10.39	46.12	--	**19,000**	**660**	--	<130	--	--	--	--	--	--	--	--	--	
MW-14	12/3/2009	56.51	--	9.61	46.90	--	**22,000**	--	**620**	--	<140	**6**	200	530	**2,800**	<0.5	--	--	**<0.5***	
MW-14	12/16/2009	56.51	--	--	--	--	**20,000**	**690**	--	<66	--	--	--	--	--	--	--	--	--	
MW-14	1/27/2010	56.51	--	9.24	47.27	--	**24,000**	--	440	--	<69	--	--	--	--	--	--	--	--	
MW-14	2/12/2010	56.51	--	9.29	47.22	--	**19,000**	--	370	--	<70	--	--	--	--	--	--	--	--	
MW-14	3/30/2010	56.51	--	9.21	47.30	--	**14,000**	--	300	--	<69	--	--	--	--	--	--	--	--	
MW-14	6/18/2010	56.51	--	8.90	47.61	--	**6,600**	--	160	--	<69	1	83	150	680	--	--	--	--	
MW-14	9/2/2010	56.51	--	10.33	46.18	--	**7,400**	320	--	<350	--	1	67	250	**1,100**	--	--	--	--	
MW-14	12/7/2010	56.51	--	10.25	46.26	--	**8,600**	--	270	--	<73	1	95	320	**1,600**	--	--	--	--	
MW-14	3/7/2011	56.51	--	8.14	48.37	--	**8,700**	--	440	--	<72	0.7	53	77	**1,100**	--	--	--	--	
MW-14	6/9/2011	56.51	--	7.61	48.90	--	**5,200**	--	100	--	<67	0.7	31	170	690	--	--	--	--	
MW-14	9/16/2011	56.51	--	8.85	47.66	--	**7,400**	--	50	--	<73	3	22	75	830	--	--	--	--	
MW-14	12/13/2011	56.51	--	9.45	47.06	--	**8,600**	--	120	--	<68	<3	34	280	**1,400**	--	--	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-14	12/19/2011	56.51	--	9.40	47.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	3/15/2012	56.51	--	8.15	48.36	--	**13,000**	--	220	--	<68	<3	110	340	**2,100**	--	--	--	--	
MW-14	6/13/2012	56.51	--	7.80	48.71	--	**4,900**	--	76	--	<72	<1	19	100	470	--	--	--	--	
MW-14	9/10/2012	56.51	--	9.10	47.41	--	**13,000**	--	200	--	<70	<5	39	390	**1,600**	--	--	--	--	
MW-14	12/10/2012	56.51	--	8.52	47.99	--	**3,000**	--	53	--	<71	<5	11	60	390	--	--	--	--	
MW-14	3/11/2013	56.51	--	7.70	48.81	--	**17,000**	--	230	--	<67	<5	100	460	**2,500**	--	--	--	--	
MW-14	6/12/2013	56.51	--	7.90	48.61	--	**10,000**	120	--	<66	--	0.5	56	390	**1,800**	--	--	--	--	
MW-14	9/18/2013	56.51	--	9.28	47.23	--	**12,000**	190	--	<67	--	0.6	50	460	**2,300**	--	--	--	--	
MW-14	12/11/2013	56.51	--	8.90	47.61	--	**9,200**	90	--	<66	--	<3	39	310	**1,900**	--	--	--	--	
MW-14	3/12/2014	56.51	--	9.02	47.49	--	**18,000**	--	--	--	--	<1	54	580	**2,800**	--	--	--	--	
MW-14	9/27/2014	56.51	--	9.22	47.29	--	280	--	--	--	--	<0.5	<0.5	<0.5	--	--	--	--	--	
MW-14	8/17/2020	56.51	--	9.65	46.86	--	**5,720**	480	--	<83.3	--	0.245 J	4.55	143	420	--	--	<2.95	--	
MW-14	9/28/2021	56.49	--	10.62	45.87	--	**5,110**	**556**	--	<250	--	0.394 J	7.98	454 E	837 E	<1.00	--	<6.00		
MW-14	12/16/2021	56.49	--	8.36	48.13	--	7,390	**686**	--	114 J	--	0.413 J	9.46	337	**1,240**	<0.101	<2.99	--	--	
MW-14	2/15/2022	56.49	--	7.80	48.69	--	**4,860**	**547**	--	<83.3	--	0.318 J	4.47	94.0	249	<0.101	<0.849	--	--	
MW-14	6/7/2022	56.49	--	7.91	48.58	--	**5,760**	438	--	225 J	--	<0.0941	4.35 J	172	456	<1.01	<0.849	--	--	
MW-14	9/28/2022	56.49	--	9.43	47.06	--	443	94.0 J	--	181 J	--	0.109 J Q	0.765 J Q	27.8 Q	72.0 Q	<1.00 Q	<2.00	--	--	
MW-14	1/5/2023	56.49	--	9.55	46.94	--	305 B [659]	92.0 J [175 J]	-- [--]	<250 [129 J]	-- [--]	<1.00 [<1.00]	0.312 J [0.639 J]	7.09 [21.3]	17.8 [49.9]	<1.00 [<1.00]	<2.00 [<2.00]	-- [--]	-- [--]	
MW-14	3/23/2023	56.49	--	9.20	47.29	--	287 B	<200	--	<250	--	<1.00	<1.00	3.41	6.76	<1.00	<2.00	--	--	
MW-14	6/21/2023	56.49	--	9.66	46.83	--	224 B	<200	--	<250	--	<1.00	<1.00	2.91 J3	6.86	<1.00	<2.00	--	--	
MW-14	9/12/2023	56.49	--	11.01	45.48	--	**2,700**	230	--	<83.3	--	0.272 J	3.21	115	295	<0.101	1.43 B J	--	--	
MW-14	12/13/2023	56.49	--	11.96	44.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Insufficient water to purge or sample
MW-14	2/21/2024	56.49	--	9.71	46.78	--	**928 J3**	259	--	<83.3	--	0.141 J	1.50	69.4	141	<0.101	<0.849	--	--	
MW-14	6/10/2024	56.49	--	9.78	46.71	--	200 [547]	90.7 J [145 J]	-- [--]	<83.3 [<83.3]	-- [--]	<0.0941 [<0.0941]	0.349 J [0.356 J]	24.5 [23.0]	25.2 [23.9]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-14	9/17/2024	56.49	--	9.85	46.64	--	53.5 B J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-15	9/27/2021	56.71	--	10.09	46.62	--	219 B	396	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00		
MW-15	12/14/2021	56.71	--	7.55	49.16	--	406 B	491	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<2.99	--	--	Odor present on probe
MW-15	2/16/2022	56.71	--	7.31	49.40	--	163 B [175 B]	428 [414]	-- [--]	<83.3 [93.1 J]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-15	6/6/2022	56.71	--	7.44	49.27	--	342	486	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-15	9/27/2022	56.71	--	9.44	47.27	--	288	372	--	158 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-15	1/6/2023	56.71	--	8.81	47.90	--	272 B	586	--	93.8 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-15	3/22/2023	56.71	--	8.57	48.14	--	171	279	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-15	6/21/2023	56.71	--	9.41	47.30	--	181 B	400	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	1.35 J	--	--	
MW-15	9/11/2023	56.71	--	10.59	46.12	--	275	406	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	2.37 B	--	--	
MW-15	12/13/2023	56.71	--	9.62	47.09	--	286 B [311.6]	**561** [<66.7]	-- [--]	<83.3 [<83.3]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-15	2/20/2024	56.71	--	8.83	47.88	--	205 B J3 J5	**509**	--	<83.3	--	<0.0941	<0.278	<0.137J3	<0.174	<0.101	<0.849	--	--	
MW-15	6/11/2024	56.71	--	9.63	47.08	--	183	409	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-15	9/16/2024	56.71	--	9.11	47.60	--	186 B	436	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-16	9/27/2021	56.62	--	9.75	46.87	--	54.7 B J	72.0 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	<6.00		
MW-16	12/14/2021	56.62	--	7.38	49.24	--	<31.6	162 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<2.99	--	--	
MW-16	2/16/2022	56.62	--	7.31	49.31	--	79.6 B J	106 J	--	84.1 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-16	6/6/2022	56.62	--	7.45	49.17	--	62.6 B J	99.1 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-16	9/27/2022	56.62	--	9.12	47.50	--	<100	<200	--	120 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-16	1/6/2023	56.62	--	8.61	48.01	--	45.9 B J	79.6 J	--	97.9 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-16	3/22/2023	56.62	--	8.4	48.22	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-16	6/20/2023	56.62	--	9.00	47.62	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00 J3	<3.00	<1.00	2.48	--	--	
MW-16	9/12/2023	56.62	--	10.25	46.37	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-16	12/13/2023	56.62	--	9.82	46.80	--	54.4 B J	**3,280**	--	240 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-16	2/20/2024	56.62	--	8.71	47.91	--	75.0 B J J3	117 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-16	6/11/2024	56.62	--	9.14	47.48	--	<31.6	76.9 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-16	9/16/2024	56.62	--	9.02	47.60	--	46.0 B J	68.3 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-17	9/28/2021	56.54	--	10.34	46.20	--	<100	**546**	--	<250	--	0.124 J	125 E	152 E	616 E	<1.00	--	<6.00		
MW-17	12/15/2021	56.54	--	7.99	48.55	--	**2,800**	**411**	--	<83.3	--	<0.0941	40.9	68.9	382	<0.101	<2.99	--	--	
MW-17	2/16/2022	56.54	--	7.68	48.86	--	**4,960**	**599**	--	125 J	--	<0.0941	28.3	96.5	336	<0.101	<0.849	--	--	
MW-17	6/7/2022	56.54	--	7.77	48.77	--	**4,080**	**648**	--	250 J	--	<0.0941	19.9	148	210	<0.101	<0.849	--	--	
MW-17	9/28/2022	56.54	--	9.59	46.95	--	**6,610**	**584**	--	152 J	--	<1.00	41.0	143 E	423 E	<1.00	<2.00	--	--	
MW-17	1/5/2023	56.54	--	9.21	47.33	--	**3,480**	**619**	--	<250	--	<1.00	32.8	90.5	414	<1.00	<2.00	--	--	
MW-17	3/23/2023	56.54	--	8.92	47.62	--	**3,320 [3,510]**	270 [302]	-- [--]	<250 [<250]	-- [--]	<1.00 [<1.00]	26 [25.8]	69.6 [70.6]	333 [329]	<1.00 [<1.00]	<2.00 [<2.00]	-- [--]	-- [--]	
MW-17	6/20/2023	56.54	--	9.51	47.03	--	**3,550**	412	--	<250	--	<1.00	23.6	63.3 J3	276	<1.00	0.874 J	--	--	
MW-17	9/11/2023	56.54	--	10.75	45.79	--	**1,780**	336	--	<83.3	--	<0.0941	32.4	56.4	168	<0.101	1.80 B J	--	--	
MW-17	12/14/2023	56.54	--	10.17	46.37	--	**1,480**	**4,350**	--	104 J	--	<0.0941	20.7	49.8	134	<0.101	<0.849	--	--	
MW-17	2/20/2024	56.54	--	9.47	47.07	--	652 J3	283	--	<83.3	--	<0.0941	16.3	31.7	87.5	<0.101	<0.849	--	--	
MW-17	6/11/2024	56.54	--	9.82	46.72	--	**2,190**	477	--	<83.3	--	<0.0941	13.0	38.4	108	<0.101	<0.849	--	--	
MW-17	9/17/2024	56.54	--	9.42	47.12	--	**1,780**	**732**	--	<83.3	--	<0.0941	33.5	95.7	228	<0.101	<0.849	--	--	
MW-18	9/28/2021	56.56	--	15.1	41.46	--	367	161 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	3.80 J		
MW-18	12/15/2021	56.56	--	8.18	48.38	--	427	174 J	--	<83.3	--	<0.0941	<0.278	0.791 J	3.96	<0.101	<2.99	--	--	
MW-18	2/16/2022	56.56	--	7.58	48.98	--	99.7 B J	127 J	--	85.1 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-18	6/7/2022	56.56	--	7.69	48.87	--	<31.6	<66.7	--	246 J	--	<0.0941	<0.278	<0.137	0.259 J	<0.101	<0.849	--	--	
MW-18	9/28/2022	56.56	--	10.01	46.55	--	73.3 J	67.9 J	--	180 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-18	1/4/2023	56.56	--	10.04	46.52	--	973	134 J	--	88.9 J	--	<1.00	<1.00	0.624 J	<3.00	<1.00	<2.00	--	--	
MW-18	3/23/2023	56.56	--	9.27	47.29	--	306 B	<200	--	<250	--	<1.00	<1.00	<1.00	0.175 J	<1.00	<2.00	--	--	
MW-18	6/21/2023	56.56	--	10.00	46.56	--	161 B	75.3 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-18	9/11/2023	56.56	--	11.45	45.11	--	759	164 J	--	<83.3	--	<0.0941	<0.278	0.167 J	0.449 J	<0.101	<0.849	--	--	
MW-18	12/13/2023	56.56	--	10.98	45.58	--	378 B	279	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-18	2/21/2024	56.56	--	9.62	46.94	--	124 B J3	163 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-18	6/10/2024	56.56	--	10.23	46.33	--	<31.6	78.1 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-18	9/16/2024	56.56	--	10.06	46.50	--	84.3 B J [50.1 B J]	117 J [113 J]	-- [--]	<83.3 [<83.3]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101[<0.101]	<0.849[<0.849]	-- [--]	-- [--]	
MW-19	12/15/2021	56.72	--	8.68	48.04	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	0.278 J	<0.101	<2.99	--	--	
MW-19	2/15/2022	56.72	--	8.11	48.61	--	67.2 J J3	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	0.253 J	<0.101	<0.849	--	--	
MW-19	6/7/2022	56.72	--	8.24	48.48	--	<31.6	<66.7	--	217 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-19	9/28/2022	56.72	--	10.00	46.72	--	<100 [<100]	<200 [<200]	-- [--]	138 J [<250]	-- [--]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<1.00 [<1.00]	<2.00 [<2.00]	-- [--]	-- [--]	
MW-19	1/4/2023	56.72	--	9.66	47.06	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-19	3/23/2023	56.72	--	9.51	47.21	--	40.1 B J	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-19	6/21/2023	56.72	--	10.11	46.61	--	65.3 B J [43.7 B J]	<200 [<200]	-- [--]	<250 [<250]	-- [--]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<1.00 [<1.00]	1.78 J [<2.00]	-- [--]	-- [--]	
MW-19	9/12/2023	56.72	--	11.77	44.95	--	162 J3	76.5 J	--	<83.3	--	<0.0941	<0.278	0.144 J	0.282 J	<0.101	1.89 B J	--	--	
MW-19	12/13/2023	56.72	--	11.74	44.98	--	127 B	**11,800**	--	**3,960**	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-19	2/21/2024	56.72	--	10.16	46.56	--	60.2 B J J3 [<31.6]	140 J [<66.7]	-- [--]	399 [86.6 J]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-19	6/10/2024	56.72	--	10.17	46.55	--	<31.6 J3	<66.7	--	<83.3	--	<0.0941	<0.278 J3	<0.137 J3	<0.174	<0.101	<0.849	--	--	
MW-19	9/17/2024	56.72	--	10.25	46.47	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-20	12/15/2021	56.57	--	9.75	46.82	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<2.99	--	--	

Table 1
Historical Groundwater Gauging Data and Select Analytical Results
Former Chevron Service Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Well	Date	TOC (ft NAVD 88)	DTP (ft)	DTW (ft)	GWE (ft NAVD 88)	NAPL Thickness (ft)	GRO (µg/L)	DRO (µg/L)	DRO w/ Silica Gel (µg/L)	HRO (µg/L)	HRO w/ Silica Gel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)	EDB (µg/L)	Comments
MTCA Method A CULs							**800/1,000**	**500**	**500**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**15**	**15**	**0.01**	
MW-20	2/15/2022	56.57	--	9.68	46.89	--	<31.6 [<31.6]	<66.7 [<66.7]	-- [--]	<83.3 [<83.3]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [0.880 J]	-- [--]	-- [--]	
MW-20	6/7/2022	56.57	--	9.80	46.77	--	<31.6	<66.7	--	219 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-20	9/28/2022	56.57	--	13.11	43.46	--	<100 J3	73.6 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-20	1/4/2023	56.57	--	11.04	45.53	--	<100	<200	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-20	3/23/2023	56.57	--	10.88	45.69	--	34.1 B J	<200	--	<250	--	<1.00	0.348 J	<1.00	0.272 J	<1.00	<2.00	--	--	
MW-20	6/21/2023	56.57	--	11.08	45.49	--	40.5 B J	77.3 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	2.74	--	--	
MW-20	9/12/2023	56.57	--	15.68	40.89	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	1.91 B J	--	--	
MW-20	12/13/2023	56.57	--	15.41	41.16	--	34.5 B J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-20	2/20/2024	56.57	--	11.47	45.10	--	59.8 B J J3	<66.7	--	184 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-20	6/10/2024	56.57	--	10.91	45.66	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-20	9/17/2024	56.57	--	12.78	43.79	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-21	9/28/2021	55.95	--	9.18	46.77	--	233	244	--	<250	--	<1.00	<1.00	2.3	12.9	<1.00	--	4.16 J		
MW-21	12/16/2021	55.95	--	6.72	49.23	--	<31.6	89.7 J	--	178 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<2.99	--	--	
MW-21	2/16/2022	55.95	--	6.58	49.37	--	50.3 B J	292	--	153 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-21	6/6/2022	55.95	--	6.67	49.28	--	<31.6	231	--	114 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-21	9/27/2022	55.95	--	8.52	47.43	--	<100	119 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-21	1/6/2023	55.95	--	8	47.95	--	<100	110 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-21	3/22/2023	55.95	--	7.51	48.44	--	167 B	<200	--	<250	--	<1.00	<1.00	0.470 J	2.25 J	<1.00	<2.00	--	--	
MW-21	6/20/2023	55.95	--	9.38	46.57	--	<100	122 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
MW-21	9/12/2023	55.95	--	9.71	46.24	--	110	194 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	3.03 B	--	--	
MW-21	12/13/2023	55.95	--	9.36	46.59	--	114 B	399	--	195 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	1.49 J	--	--	
MW-21	2/21/2024	55.95	--	8.09	47.86	--	70.7 B J J3 [<31.6]	203 [207]	-- [--]	160 J [150 J]	-- [--]	<0.0941 [<0.0941]	<0.278 [<0.278]	<0.137 [<0.137]	<0.174 [<0.174]	<0.101 [<0.101]	<0.849 [<0.849]	-- [--]	-- [--]	
MW-21	6/11/2024	55.95	--	9.07	46.88	--	75.2 B J	80.8 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
MW-21	9/16/2024	55.95	--	8.36	47.59	--	<31.6	105 J	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
RS-1	12/14/2021	--	--	--	--	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<2.99	--	--	
RS-1	1/4/2023	--	--	--	--	--	43.1 B J	69.5 J	--	<250	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
RS-1	3/23/2023	--	--	--	--	--	119 B	<200	--	<250	--	<1.00	3.25	0.906 J	4.88	<1.00	<2.00	--	--	
RS-1	3/23/2023	--	--	--	--	--	<100	<200	--	<250	--	<1.00	3.19	0.940 J	5.24	<1.00	<2.00	--	--	
RS-1	6/20/2023	--	--	--	--	--	<100	<200	--	<250	--	0.112 J	1.01	0.199 J J3	1.01 J	<1.00	<2.00	--	--	
RS-1	9/11/2023	--	--	--	--	--	32.6 J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	3.67 B	--	--	
RS-1	9/12/2023	--	--	--	--	--	39.7 J	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
RS-1	12/13/2023	--	--	--	--	--	139	**2,530**	--	169 J	--	0.146 J	6.27	1.46	8.80	<0.101	<0.849	--	--	
RS-1	2/20/2024	--	--	--	--	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
RS-1	2/21/2024	--	--	--	--	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
RS-1	6/10/2024	--	--	--	--	--	36.8 J	149 J	--	<83.3	--	<0.0941	0.395 J	<0.137	0.645 J	<0.101	<0.849	--	--	
RS-1	9/16/2024	--	--	--	--	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
RS-1	9/17/2024	--	--	--	--	--	<31.6	<66.7	--	<83.3	--	<0.0941	<0.278	<0.137	<0.174	<0.101	<0.849	--	--	
RS-2	6/7/2022	--	--	--	--	--	<31.6	171 J	--	156 J	--	<0.0941	<0.278	<0.137	<0.174	<0.101	--	<0.849	--	
RS-2	1/5/2023	--	--	--	--	--	58.6 B J	134 J	--	146 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	--	--	
RS-2	6/21/2023	--	--	--	--	--	73.2 B J	<200	--	<250	--	0.131 J	1.47	0.211 J	1.28 J	<1.00	1.81 B J	--	--	
RS-2	12/14/2023	--	--	--	--	--	138	**6,970**	--	**514**	--	0.121 J	6.17	1.45	8.84	<0.101	<0.849	--	--	
RS-2	6/11/2024	--	--	--	--	--	70.8 B J	114 J	--	<83.3	--	<0.0941	0.382 J	<0.137	0.662 J	<0.101	<0.849	--	--	
RS-3	1/6/2023	--	--	--	--	--	125 B	**601**	--	229 J	--	<1.00	0.680 J	<1.00	0.309 J	<1.00	<2.00	--	--	
TB-1	9/11/2023	--	--	--	--	--	<31.6	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-1	9/12/2023	--	--	--	--	--	<31.6	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-1	12/13/2023	--	--	--	--	--	<31.6	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-1	2/21/2024	--	--	--	--	--	39.3 J	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-1	6/10/2024	--	--	--	--	--	<31.6	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-1	9/16/2024	--	--	--	--	--	<31.6	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-1	9/17/2024	--	--	--	--	--	<31.6	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-2	12/14/2023	--	--	--	--	--	<31.6	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	
TB-2	6/11/2024	--	--	--	--	--	84.7 B J	--	--	--	--	<0.0941	<0.278	<0.137	<0.174	--	--	--	--	

Notes:

Analytical results are presented in micrograms per liter (µg/L*)*
Surveyed in 2021 by Otak, Inc. using NAD 83 (horizontal) and NAVD 88 (vertical)
800/1,000 = GRO MTCA Method A CUL with benzene present is 800 µg/L and without is 1,000 µg/L
BOLD values are greater than their respective MTCA Method A CUL
***BOLD** values are non-detect below the laboratory MDL, but the MDL is greater than the MTCA Method A CUL
If NAPL is present, GWE is corrected according to the following formula: (TOC - DTW) + (0.8 x NAPL)
Due to weather delays, January 2023 analytical data represent the fourth quarter 2022 groundwater sampling event.
Historical are values reported to RDL. From the third quarter 2023 on, values should always be reported to the MDL.

Abbreviations:

GB = Grab-groundwater sample
MW = Groundwater monitoring well
TOC = Top of casing in feet above NAVD 88
DTP = Depth to product in feet below TOC
DTW = Depth to water in feet below TOC
GWE = Groundwater elevation in feet relative to NAVD 88
NAPL = Non-aqueous phase liquid thickness in feet
[21.2] = Blind duplicate sample results
-- = Not applicable, not available, or not analyzed
ND = Not detected
MDL = Method detection limit
MTCA = Model Toxics Control Act Cleanup
CUL = Cleanup Level
NAVD 88 = North American Vertical Datum of 1988
USEPA = United States Environmental Protection Agency
TB = Trip Blank
RS = Rinsate Blank

Analytical Methods:

Samples analyzed by NWTPH-Gx
GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics,
Samples analyzed by NWTPH-Dx
DRO = Total Petroleum Hydrocarbons as Diesel Range Organics
HRO = Total Petroleum Hydrocarbons as Heavy Oil Range Organics
Samples analyzed by NWTPH-Dx modified
DRO w/ Silica Gel = Total Petroleum Hydrocarbons as Diesel Range Organics with silica gel cleanup
HRO w/ Silica Gel = Total Petroleum Hydrocarbons as Heavy Oil Range Organics with silica gel cleanup
Samples analyzed by USEPA Method 8260B/8260D
BTEX = benzene, toluene, ethylbenzene, and total xylenes
MTBE = Methyl tertiary-butyl ether
EDB = 1,2-Dibromoethane (ethylene dibromide)
Samples analyzed by USEPA Method 6010D/6020B
Dissolved lead
Total lead

Laboratory Qualifiers:

<n = Not detected at or above the laboratory MDL
B = The same analyte is found in the associated blank
E = The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initialcalibration (ICAL).
J = Estimated value; result is ≥ the MDL and < the Reported Detection Limit
J3 = The associated batch QC was outside the established quality control range for precision
J5 = The sample matrix interfered with the ability to make any accurate determination; spike value is high.
Q = Sample was prepared and/or analyzed past holding time as defined in tl

Table 2
Sampling and Analysis Plan
Former Chevron Station 97502
640 Metcalf Street, Sedro-Woolley, Washington

Analytes/Field Data	Example Method	Baseline[a]	Wells	Performance Monitoring[b]	Wells
Primary Geochemical Parameters					
Depth to water	Electronic interface probe	X	MW-4, MW-5, MW-6, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21	X	MW-4, MW-5, MW-6, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21
pH	YSI or similar	X		X	
ORP/redox (pre/post-purge)	YSI or similar	X		X	
Dissolved oxygen (pre/post-purge)	YSI or similar	X		X	
Conductivity	YSI or similar	X		X	
Turbidity	YSI or similar	X		X	
Temperature	YSI or similar	X		X	
COCs					
TPH-GRO	NWTPH-Gx	X	MW-4, MW-5, MW-6, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21	X	MW-4, MW-5, MW-6, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21
TPH-DRO and TPH-HRO	NWTPH-Dx	X		X	
TPH-DRO and TPH-HRO with SGC	NWTPH-Dx modified (as needed)	X		X	
BTEX, MTBE, and EDC	USEPA Method 8260D	X		X	
EDB	USEPA Method 8011	X		X	
Lead	USEPA Method 6000 series	X		X	
Secondary Geochemical Parameters					
Sulfate	USEPA Method 9056A	X	MW-6, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-17, MW-18, MW-19	X	MW-6, MW-7, MW-8, MW-10, MW-11, MW-13, MW-14, MW-17, MW-19
Sulfide	SM Method 4500S2 D	X		X	
Nitrate	USEPA Method 9056A	X		X	
Nitrite	USEPA Method 9056A	X		X	
Total Kjeldahl Nitrogen	USEPA Method 351.2	X		X	
Dissolved Iron	USEPA Method 6010D	X		X	
Dissolved Manganese	USEPA Method 6010D	X		X	
Total Manganese	USEPA Method 6010D	X		X	
Total Iron	USEPA Method 6010D	X		X	
Methane	USEPA Method RSK175	X		X	
Alkalinity	USEPA Method 2320B	X		X	
Total Organic Carbon	USEPA Method 9060A	X		X	

Notes:

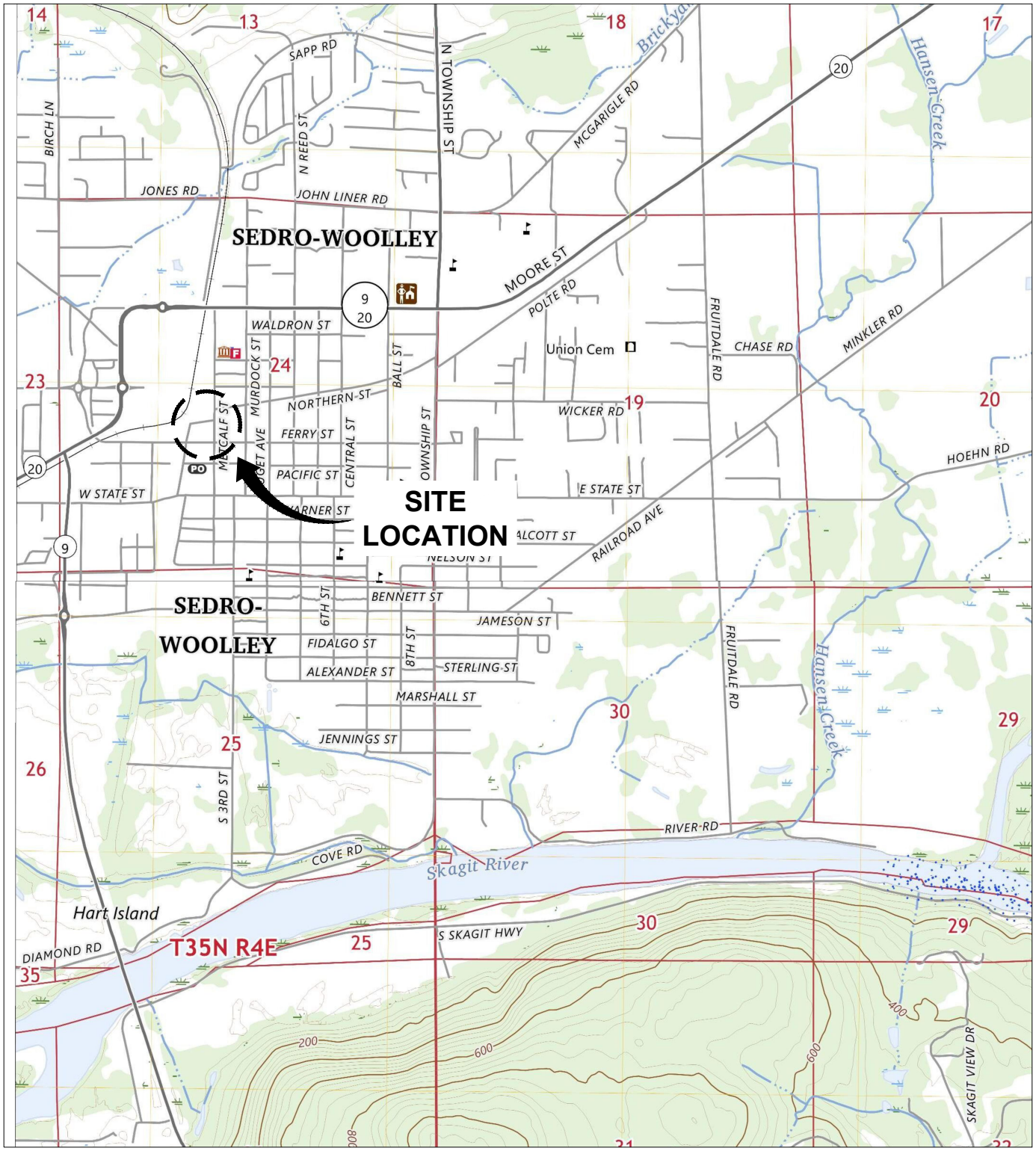
[a] Baseline monitoring will be performed on a quarterly basis for 1 year.

[b] Performance monitoring will be performed semi-annually for the second and third years and annually for subsequent years.

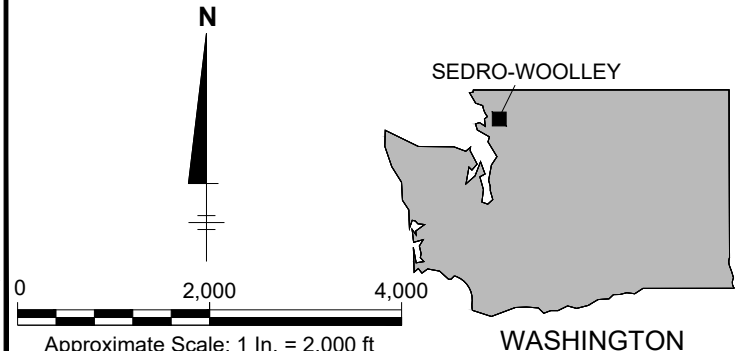
Acronyms and Abbreviations:

BTEX = benzene, toluene, ethylbenzene, total xylenes
COC = constituent of concern
MTBE = methyl tertiary butyl ether
ORP = oxidation-reduction potential
SGC = silica gel cleanup
SM = Standard Method
TPH-DRO = total petroleum hydrocarbons as diesel-range organics
TPH-GRO = total petroleum hydrocarbons as gasoline-range organics
TPH-HRO = total petroleum hydrocarbons as heavy oil-range organics
USEPA = United States Environmental Protection Agency
YSI = Yellow Springs Instruments

Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO.QUAD, NEWPORT BEACH, OE S, CA, PHOTOGRAPHED 2023.



FORMER CHEVRON STATION 97502
640 METCALF STREET
SEDRO-WOOLLEY, WASHINGTON

SITE LOCATION MAP

AECOM

FIGURE
1

C:\Users\PadureanuO\AECOM\Chevron North America - Chevron 300\Project Documents\WA Non-PLIA\97502 - Sedro-Woolley\900_CAD_GIS\910_CAD\GWMR 1Q2025\GEN-F02-SITE PLAN.dwg LAYOUT: 2 SAVED: 4/8/2025 4:58 PM ACADVER: 24.2S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ----
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BOWLING ALLEY

M.H.

N

1991 UST REMOVAL EXCAVATION

FORMER KEROSENE UST

RESTROOMS

C.B.#3

SB3

MW-3

SANITARY SEWER M.H.#1

CLOCK TOWER

MW-1

MW-6

FORMER USED OIL UST

JUNE 1992 EXCAVATION

MW-9

FOUNTAIN

L.P.

FEBRUARY 1992 EXCAVATION

C.B.

M.H.

C.B.

MW-16

PLANTER

FORMER GASOLINE USTS

PLANTER

M.H.

MW-2

JUNE 1992 EXCAVATION

L.P.

FORMER STATION BUILDING

MW-15

SB1

FEBRUARY 1992 EXCAVATION

FORMER FUEL OIL UST

RESTAURANT

MW-21

FORMER DISPENSER ISLAND

FORMER DISPENSER ISLAND

FEBRUARY 1992 EXCAVATION

C.B.

STORM M.H.#2

SIDEWALK

METCALF STREET

JUNE 1992 EXCAVATION

MW-4

L.P.

PLANTER

MW-12

FORMER VAULT AREA

JUNE 1992 EXCAVATION

FORMER UNKNOWN USTs

MW-5

FORMER DISPENSER ISLAND

L.P.

L.P.

C.B.

BRICK DECK

MW-7

MW-8

PLANTER

C.B.#1

MW-18

MW-13

L.P.

RAMP

SIDEWALK

MW-17

SB2

L.P.

RAMP

WEST FERRY STREET

STORM M.H.#1

C.B.

MW-11

VP-1

MW-14

VP-2

MW-10

C.B.

DRIVEWAY

SIDEWALK

MW-19

RESTAURANT/RETAIL BUILDING

VP-3

ALLEY

RESTAURANT/RETAIL BUILDING

MW-20

LEGEND

- APPROXIMATE BOUNDARY
- APPROXIMATE FORMER EXCAVATION BOUNDARY - 1991
- APPROXIMATE FORMER EXCAVATION BOUNDARY - FEBRUARY 1992
- APPROXIMATE FORMER EXCAVATION BOUNDARY - JUNE 1992
- MW-4 MONITORING WELL LOCATION
- MW-1 DECOMMISSIONED MONITORING WELL
- VP-1 VAPOR PROBE
- VP-3 DECOMMISSIONED VAPOR PROBE
- SB1 SOIL BORING
- M.H. APPROXIMATE MANHOLE
- C.B. APPROXIMATE CATCH BASIN
- C.O. APPROXIMATE CLEAN OUT
- L.P. APPROXIMATE LIGHT POLE

NOTES:

1. BASE MAP PROJECTED TO NAD83 WASHINGTON STATE PLANE, NORTH ZONE, U.S. FEET.
2. WELLS SURVEYED BY OTAK OCTOBER 15, 2021.
3. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE.

0 20' 40'

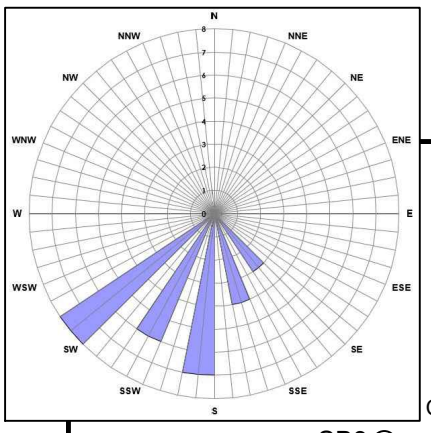
APPROXIMATE SCALE : 1 in. = 40 ft.

FORMER CHEVRON STATION 97502
640 METCALF STREET
SEDRO-WOOLLEY, WASHINGTON

SITE PLAN

AECOM

FIGURE 2



BOWLING ALLEY

1991 UST REMOVAL EXCAVATION

FORMER KEROSENE UST

RESTROOMS

C.B.#3

SB3

MW-3

FORMER USED OIL UST

JUNE 1992 EXCAVATION

MW-9

FOUNTAIN

L.P.

MW-1

CLOCK TOWER

MW-6 (49.23)

FEBRUARY 1992 EXCAVATION

MW-16 (49.24)

M.H.

C.B.

PLANTER

PLANTER

M.H.

FORMER GASOLINE USTS

MW-2

JUNE 1992 EXCAVATION

L.P.

SB1

FORMER STATION BUILDING

MW-15 (49.16)

FEBRUARY 1992 EXCAVATION

FORMER FUEL OIL UST

RESTAURANT

JUNE 1992 EXCAVATION

FORMER DISPENSER ISLAND

MW-21 (49.23)

FEBRUARY 1992 EXCAVATION

C.B.

STORM M.H.#2

SIDEWALK

49.0

L.P.

MW-4 (49.03)

PLANTER

MW-5 (49.01)

49.0

FORMER VAULT AREA

JUNE 1992 EXCAVATION

FORMER UNKNOWN USTs

L.P.

L.P.

FORMER DISPENSER ISLAND

C.B.

BRICK DECK

MW-12 (48.89)

MW-7 (48.86)

MW-8 (48.69)

PLANTER

C.B.#1

L.P.

RAMP

MW-18 (48.38)

SIDEWALK

MW-13 (48.78)

MW-17 (48.53)

RAMP

SB2

L.P.

SANITARY SEWER M.H.#1

METCALF STREET

C.B.

WEST FERRY STREET

STORM M.H.#1

C.B.

48.0

MW-11 (48.12)

VP-1

MW-14 (48.13)

VP-2

MW-10 (48.15)

C.B.

DRIVEWAY

SIDEWALK

MW-19 (48.04)

VP-3

RESTAURANT/RETAIL BUILDING

ALLEY

47.0

MW-20 (46.82)

LEGEND

- APPROXIMATE BOUNDARY
- MW-4 MONITORING WELL LOCATION
- MW-1 DECOMMISSIONED MONITORING WELL
- VP-1 VAPOR PROBE
- VP-3 DECOMMISSIONED VAPOR PROBE
- SB1 SOIL BORING
- M.H. APPROXIMATE MANHOLE
- C.B. APPROXIMATE CATCH BASIN
- C.O. APPROXIMATE CLEAN OUT
- L.P. APPROXIMATE LIGHT POLE
- (48.12) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- 48.0 GROUNDWATER ELEVATION CONTOUR (FEET)
- GROUNDWATER FLOW DIRECTION

NOTES:

1. BASE MAP PROJECTED TO NAD83 WASHINGTON STATE PLANE, NORTH ZONE, U.S. FEET.
2. WELLS SURVEYED BY OTAK OCTOBER 15, 2021.
3. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE.

0 20' 40'

APPROXIMATE SCALE : 1 in. = 40 ft.

FORMER CHEVRON STATION 97502
640 METCALF STREET
SEDRO-WOOLLEY, WASHINGTON

GROUNDWATER GAUGING RESULTS Q4 2021

AECOM

FIGURE 3

BOWLING ALLEY

N

M.H.

1991 UST REMOVAL EXCAVATION

FORMER KEROSENE UST

RESTROOMS

C.B.#3

SB3

MW-3*

FORMER USED OIL UST

JUNE 1992 EXCAVATION

CLOCK TOWER

MW-1*

SANITARY SEWER M.H.#1

MW-6*

FEBRUARY 1992 EXCAVATION

FOUNTAIN

MW-9*

L.P.

MW-16

M.H.

C.B.

C.B.

PLANTER

PLANTER

M.H.

FORMER GASOLINE USTS

MW-2*

JUNE 1992 EXCAVATION

L.P.

SB1

FORMER STATION BUILDING

MW-15

FEBRUARY 1992 EXCAVATION

FORMER FUEL OIL UST

RESTAURANT

MW-21

FEBRUARY 1992 EXCAVATION

FORMER DISPENSER ISLAND

FORMER DISPENSER ISLAND

C.B.

STORM M.H.#2

SIDEWALK

METCALF STREET

JUNE 1992 EXCAVATION

L.P.

MW-4

PLANTER

MW-12

MW-5*

FORMER VAULT AREA

JUNE 1992 EXCAVATION

FORMER UNKNOWN USTs

FORMER DISPENSER ISLAND

C.B.

BRICK DECK

L.P.

L.P.

MW-7

MW-8

PLANTER

C.B.#1

L.P.

RAMP

MW-18

MW-13

SIDEWALK

MW-17

SB2

L.P.

RAMP

WEST FERRY STREET

STORM M.H.#1

C.B.

MW-11

VP-1

MW-14

VP-2

MW-10

C.B.

DRIVEWAY

SIDEWALK

MW-19

RESTAURANT/RETAIL BUILDING

ALLEY

MW-20

LEGEND

- APPROXIMATE BOUNDARY
- APPROXIMATE FORMER EXCAVATION BOUNDARY - 1991
- APPROXIMATE FORMER EXCAVATION BOUNDARY - FEBRUARY 1992
- APPROXIMATE FORMER EXCAVATION BOUNDARY - JUNE 1992
- MW-4 MONITORING WELL LOCATION
- MW-1 DECOMMISSIONED MONITORING WELL
- VP-1 VAPOR PROBE
- VP-3 DECOMMISSIONED VAPOR PROBE
- SB1 SOIL BORING
- M.H. APPROXIMATE MANHOLE
- C.B. APPROXIMATE CATCH BASIN
- C.O. APPROXIMATE CLEAN OUT
- L.P. APPROXIMATE LIGHT POLE
- * WELL NOT SAMPLED IN PAST 4 SAMPLING EVENTS
- CONCENTRATIONS OBSERVED AT LEAST ONCE ABOVE MTCA METHOD A CULs
- CONCENTRATIONS OBSERVED BELOW MTCA METHOD A CULs
- HISTORIC MTCA SITE BOUNDARY MAP FOR GROUNDWATER (DASHED WHERE INFERRED)
- Q4 2021 MTCA SITE BOUNDARY MAP FOR GROUNDWATER (DASHED WHERE INFERRED)
- MTCA MODEL TOXICS CONTROL ACT
- CULs CLEANUP LEVELS

NOTES: VP-3

1. BASE MAP PROJECTED TO NAD83 WASHINGTON STATE PLANE, NORTH ZONE, U.S. FEET.
2. WELLS SURVEYED BY OTAK OCTOBER 15, 2021.
3. ALL OTHER FEATURES AND LOCATIONS ARE APPROXIMATE.
4. DUE TO SITE CONSTRAINTS, UNABLE TO DELINEATE FURTHEST DOWNGRADIENT PLUME EXTENTS.

0 20' 40'

APPROXIMATE SCALE : 1 in. = 40 ft.

FORMER CHEVRON STATION 97502
640 METCALF STREET
SEDRO-WOOLLEY, WASHINGTON

GROUNDWATER MTCA BOUNDARY Q4 2021

AECOM

FIGURE 4

Appendix A Monitoring Well Sampling Procedure

Monitoring Well Sampling

Procedure 3-14

1.0 Purpose and Scope

1.1 This standard operating procedure (SOP) describes the actions to be used during monitoring well sampling activities and establishes the method for sampling groundwater monitoring wells for water-borne contaminants and general groundwater chemistry. The objective is to obtain groundwater samples that are representative of aquifer conditions with as little alteration to water chemistry as possible.

1.2 As guidance for specific activities, this procedure does not obviate the need for professional judgment. Deviations from this procedure while planning or executing planned activities must be approved in accordance with Program requirements for technical planning and review.

2.0 Safety

2.1 Depending upon the site-specific contaminants, various protective programs must be implemented prior to sampling the first well. All **Field Sampling Personnel** responsible for sampling activities must review the project-specific Health and Health Plan (HASP) paying particular attention to the control measures planned for the well sampling tasks. Conduct preliminary area monitoring of sampling wells to determine the potential hazard to **Field Sampling Personnel**. If significant contamination is observed, minimize contact with potential contaminants in both the vapor phase and liquid matrix using appropriate personal protective equipment (PPE).

2.2 Observe standard health and safety practices according to the project-specific HASP. Suggested minimum protection during well sampling activities includes inner disposable vinyl gloves, outer chemical-protective nitrile gloves, and rubberized steel-toed boots. Half-face respirators and cartridges and Tyvek® suits may be necessary depending on evaluation for PFAS and on the contaminant concentrations. Refer to the project-specific HASP for the required PPE.

2.3 The following safety precautions should be observed to minimize physical hazards associated with monitoring well sampling:

- To avoid lifting injuries associated with pump and bailers retrieval, use the large muscles of the legs, not the back.
- Stay clear of all moving equipment, and avoid wearing loose fitting clothing.
- When using tools for cutting purposes, cut away from yourself. The use of appropriate, task-specific cutting tools is recommended.
- To avoid slip/trip/fall conditions as a result of pump discharge, use textured boots/boot cover bottoms.
- To avoid heat/cold stress as a result of exposure to extreme temperatures and PPE, drink electrolyte replacement fluids (1 to 2 cups per hour is recommended) and, in cases of extreme cold, wear fitted insulating clothing.
- Be aware of restricted mobility due to PPE.

3.0 Terms and Definitions

None.

4.0 Interferences

4.1 Potential interferences could result from cross-contamination between samples or sample locations. Minimization of the cross-contamination will occur through the following:

- The use of clean sampling tools at each location as necessary; and
- Avoidance of material that is not representative of the media to be sampled.

5.0 Training and Qualifications

5.1 Qualifications and Training

The individual executing these procedures must have read, and be familiar with, the requirements of this SOP.

5.2 Responsibilities

5.2.1 The **Field Team Coordinator** is responsible for ensuring that monitoring well sampling activities comply with this procedure. The **Field Team Coordinator** is responsible for ensuring that **Field Personnel** involved in monitoring well sampling shall have the appropriate education, experience, and training to perform their assigned tasks.

5.2.2 The **Project Manager** is responsible for ensuring overall compliance with this procedure.

5.2.3 All **Field Personnel** are responsible for the implementation of this procedure.

6.0 Equipment and Supplies

6.1 If sampling for PFAS, the sampler must take additional care to ensure no cross-contamination occurs from sampling equipment. Reference the Field Sampling Plan (FSP) for best practices regarding sampling equipment when necessary.

6.2 Purging and Sampling Equipment

- Pump (peristaltic, portable bladder, submersible)
- Polyethylene bladders (for portable bladder pumps)
- Bladder pump controller (for portable bladder pumps)
- Air compressor (for portable bladder pumps)
- Nitrogen cylinders (for portable bladder pumps)
- 12-volt power source
- Polyethylene inlet and discharge tubing
- Silicone tubing appropriate for peristaltic pump head
- High density polyethylene (HDPE) bailer appropriately sized for well
- Disposable bailer string (polypropylene)
- Individual or multi-parameter water quality meter(s) with flow-through cell to measure temperature, pH, specific conductance, dissolved oxygen (DO), oxidation reduction potential (ORP), and/or turbidity
- Turbidity meter
- Water level meter
- Oil/water interface probe

6.3 General Equipment

- Sample kit (i.e., bottles, labels, preservatives, custody records and tape, cooler, wet ice)
- Sample chain-of-custody (COC) forms
- Sample Collection Records
- Sample packaging and shipping supplies
- Fine-tipped Sharpie® marker
- Deionized water supply
- Polyethylene water dispenser bottles
- HDPE flow measurement cup or bucket
- 5-gallon buckets
- Instrument calibration solutions
- Stopwatch or watch
- Disposable, powderless Nitrile gloves
- Cotton towels
- Trash bags
- Zipper-lock (e.g., Ziploc brand) bags
- Equipment decontamination supplies (e.g., Alconox®, Liquinox®, NOT Decon 90™)
- Health and safety supplies (as required by the HASP)
- Well keys or combinations
- Monitoring well location map(s)
- Field project logbook/ballpoint pen

7.0 Calibration or Standardization

7.1 Field instruments will be calibrated daily according to the requirements of the FSP and/or manufacturer's specifications for each piece of equipment. Equipment will be checked daily with the calibration solutions at the end of use of the equipment. Calibration records shall be recorded in the field logbook or appropriate field form.

7.2 If readings are suspected to be inaccurate, the equipment shall be checked with the calibration solutions and/or re-calibrated.

8.0 Procedure

8.1 Preparation

8.1.1 Site Background Information

Establish a thorough understanding of the purposes of the sampling event prior to field activities. Conduct a review of all available data obtained from the site and pertinent to the water sampling. Review well history data including, but not limited to, well locations, sampling history, purging rates, turbidity problems, previously used purging methods, well installation methods, well completion records, well development methods, previous analytical results, presence of an immiscible phase, historical water levels, and general hydrogeologic conditions.

Previous groundwater development and sampling logs give a good indication of well purging rates and the types of problems that might be encountered during sampling, such as excessive turbidity and low well yield. They may also indicate where dedicated pumps are placed in the water column. To help minimize the potential for cross-contamination, well purging and sampling and water level measurement collection shall proceed from the least contaminated to the most contaminated well, as indicated by previous analytical results. This order may be changed in the field if conditions warrant it, particularly if dedicated sampling equipment is used. A review of prior sampling procedures and results may also identify which purging and sampling techniques are appropriate for the parameters to be tested under a given set of field conditions.

8.2 Groundwater Sampling Procedures

Groundwater sampling procedures at a site shall include:

1) An evaluation of the well security and condition prior to sampling
2) Decontamination of equipment
3) Measurement of well depth to groundwater
4) Assessment of the presence or absence of an immiscible phase
5) Assessment of purge parameter stabilization
6) Purging of static water within the well and well bore and
7) Obtaining a groundwater sample.

Each step is discussed in sequence below. Depending upon specific field conditions, additional steps may be necessary. As a rule, at least 24 hours should separate well development and well sampling events.

8.2.1 Well Security and Condition

At each monitoring well location, observe the conditions of the well and surrounding area. If required by the FSP, the following information may be noted on a Groundwater Sample Collection Record (Attachment 1) or in the field logbook:

- Condition of the well's identification marker
- Condition of the well lock and associated locking cap
- Integrity of the well—well pad condition, protective outer casing, obstructions or kinks in the well casing, presence of water in the annular space, and the top of the interior casing; and
- Condition of the general area surrounding the well.

8.2.2 Decontamination of Equipment

Prior to sampling the first monitoring well and after each monitoring well sample is collected, all non-dedicated sampling equipment will be decontaminated following the procedure described in the FSP.

8.2.3 Measurement of Static Water Level Elevation

Before purging the well, measure static water levels in each well on site. If the well cap is not vented, remove the cap several minutes before measurement to allow water levels to equilibrate to atmospheric pressure.

Measure the depth to standing water and the total depth of the well to the nearest 0.01 foot to provide baseline hydrologic data, to calculate the volume of water in the well, and to provide information on the integrity of the well (e.g., identification of siltation problems). If not already present, mark an easily identified reference point for water level measurements that will become

the measuring point for all water level measurements. This location and elevation must be surveyed.

The presence of light, non-aqueous phase liquids (LNAPLs) and/or dense, non-aqueous phase liquids (DNAPLs) in a well requires measurement of the elevation of the top and the bottom of the product, generally using an interface probe. Water levels in such wells must then be corrected for density effects to accurately determine the elevation of the water table.

At each location, measure water levels several times in quick succession to ensure that the well has equilibrated to atmospheric conditions prior to recording the measurement.

8.2.4 Detection of Immiscible Phase Layers

- Complete the following steps for detecting the presence of LNAPL and DNAPL before the well is purged for conventional sampling. These procedures may not be required for all wells. Consult the FSP prior to field deployment to determine if assessing the presence of LNAPL and/or DNAPL is necessary.
- Sample the headspace in the wellhead immediately after the well is opened for organic vapors using either a photoionization detector (PID) or an organic vapor analyzer and record the measurements.
- Lower an interface probe into the well to determine the existence of any immiscible layer(s), LNAPL and/or DNAPL, and record the measurements.
- Confirm the presence or absence of an immiscible phase by slowly lowering a clear bailer to the appropriate depth, then visually observing the results after sample recovery.
- In rare instances, such as when very viscous product is present, it may be necessary to utilize hydrocarbon- and water-sensitive pastes for measurement of LNAPL thickness. This is accomplished by smearing adjacent, thin layers of both hydrocarbon- and water-sensitive pastes along a steel measuring tape and inserting the tape into the well. An engineering tape showing tenths and hundredths of feet is required. Record depth to water, as shown by the mark on the water-sensitive paste, and depth to product, as shown by the mark on the product-sensitive paste. In wells where the approximate depth to water and product thickness are not known, it is best to apply both pastes to the tape over a fairly long interval (5 feet or more). Under these conditions, measurements are obtained by trial and error and may require several insertions and retrievals of the tape before the paste-covered interval of the tape encounters product and water. In wells where approximate depths of air-product and product-water interfaces are known, pastes may be applied over shorter intervals. Water depth measurements should not be used in preparation of water table contour maps until they are corrected for depression by the product.
- If the well contains an immiscible phase, it may be desirable to sample this phase separately. Section 8.2.6 presents immiscible phase sampling procedures. It may not be meaningful to conduct water sample analysis of water obtained from a well containing LNAPLs or DNAPLs (consult the **Project Manager)**.

8.2.5 Purging Equipment and Use

8.2.5.1 General Requirements

The water present in a well prior to sampling may not be representative of in situ groundwater quality and shall be removed prior to sampling. Handle all groundwater removed during sampling in accordance with the investigation-derived waste handling procedures in the FSP. Purging shall be accomplished by methods as indicated in the FSP or by those required by state requirements.

The purge rate should be low enough that substantial drawdown in the well does not occur during purging. In addition, a low purge rate will reduce the possibility of stripping volatile organic compounds (VOCs) from the water and will reduce the likelihood of increasing the turbidity of the sample due to mobilizing colloids in the subsurface that are immobile under natural flow conditions.

The field sampler shall ensure that purging does not cause formation water to cascade down the sides of the well screen. Wells should not be purged to dryness if recharge causes the formation water to cascade down the sides of the screen, as this will cause an accelerated loss of volatiles. This problem should be anticipated based on the results of either the well development task or historical sampling events. In general, place the intake of the purge pump in the middle of the saturated screened interval within the well to allow purging, and at the same time minimize disturbance/overdevelopment of the screened interval in the well. Water shall be purged from the well at a rate that does not cause recharge water to be excessively agitated unless an extremely slow recharging well is encountered where complete evacuation is unavoidable. During the well purging procedure, collect water level and/or product level measurements to assess the hydraulic effects of purging and increase or decrease purge rate as needed. If the well is purged dry, allow the well to recover sufficiently to provide enough water for the specified analytical parameters, and then sample it.

The groundwater pump will be connected in-line to a water quality meter. Every five minutes during purging, record the temperature, pH, specific conductivity, DO, ORP, and turbidity on the groundwater sample form. Purging shall be considered complete once three consecutive parameters have stabilized to the parameter-specific requirements detailed on the groundwater sample form (Attachment 1). Once these stability metrics have been met, sample the well.

8.2.5.2 Purging Equipment and Methods

Submersible Pump

A stainless-steel submersible pump may be utilized for purging both shallow and deep wells prior to sampling the groundwater for semivolatile and non-volatile constituents but ***is*** generally not preferred for VOCs unless there are no other options (e.g., well over 200 feet deep). For wells over 200 feet deep, the submersible pump is one of the few technologies available to feasibly accomplish purging under any yield conditions. For shallow wells with low yields, submersible pumps are generally inappropriate due to overpumpage of the wells (<1 gallon per minute), which causes increased aeration of the water within the well.

Steam clean or otherwise decontaminate the pump and discharge tubing prior to placing the pump in the well. The submersible pump shall be equipped with an anti-backflow check valve to limit the amount of water that will flow back down the drop pipe into the well. Place the pump in the middle of the saturated screened interval within the well and maintain it in that position during purging.

Bladder Pump

A stainless-steel bladder pump can be utilized for purging and sampling wells up to 200 feet in depth for volatile, semivolatile, and non-volatile constituents. Use of the bladder pump is most effective in low to moderate yield wells and ***is*** often the preferred method for low-flow sampling. When sampling for VOCs and/or semi-volatile organic compounds (SVOCs) and PFAS, polyethylene bladders and PFAS-free O-rings and pump accessories should be used.

Either compressed dry nitrogen or compressed dry air, depending upon availability, can operate the bladder pump. The driving gas utilized must be dry to avoid damage to the bladder pump control box. Decontaminate the bladder pump prior to use.

Centrifugal, Peristaltic, or Diaphragm Pump

A centrifugal, peristaltic, or diaphragm pump may be utilized to purge a well if the water level is relatively shallow. New or dedicated HDPE tubing is inserted into the midpoint of the saturated screened interval of the well. Water should be purged at a rate that satisfies low-flow requirements (i.e., does not cause drawdown). Centrifugal, peristaltic, and diaphragm pumps are generally discouraged for VOC sampling; however, follow methods allowed per the project-specific FSP or state requirements.

Air Lift Pump

Airlift pumps are not appropriate for purging or sampling.

Bailer

Avoid using a bailer to purge a well because it can result in overdevelopment of the well and create excessive purge rates. If a bailer must be used, the bailer should either be dedicated or disposable. An HDPE bailer with polypropylene string mounted on a reel is recommended for lowering the bailer in and out of the well.

Lower the bailer below the water level of the well with as little disturbance of the water as possible to minimize aeration of the water in the well. One way to gauge the depth of water on the reel is to mark the depth to water on the bailer wire with a stainless-steel clip. In this manner, less time is spent trying to identify the water level in the well.

8.2.6 Monitoring Well Sampling Methodologies

8.2.6.1 Sampling Light, Non-Aqueous Phase Liquids (LNAPL)

Collect LNAPL, if present, prior to any purging activities. The sampling device shall generally consist of a dedicated or disposable bailer equipped with a bottom-discharging device. Lower the bailer slowly until contact is made with the surface of the LNAPL and to a depth less than that of the immiscible fluid/water interface depth as determined by measurement with the interface probe. Allow the bailer to fill with LNAPL and retrieve it.

When sampling LNAPLs, never drop bailers into a well and always remove them from the well in a manner that causes as little agitation of the sample as possible. For example, the bailer should not be removed in a jerky fashion or be allowed to continually bang against the well casing as it is raised. Teflon bailers should always be used when sampling LNAPL. The cable used to raise and lower the bailer shall be composed of an inert material (e.g., stainless steel) or coated with an inert material (e.g., Teflon).

8.2.6.2 Sampling Dense, Non-Aqueous Phase Liquids (DNAPL)

Collect DNAPL prior to any purging activities. The best method for collecting DNAPL is to use a double-check valve, stainless steel bailer, or a Kemmerer (discrete interval) sampler. The sample shall be collected by slow, controlled lowering of the bailer to the bottom of the well, activation of the closing device, and retrieval.

8.2.6.3 Groundwater Sampling Methodology

The well shall be sampled when groundwater within it is representative of aquifer conditions, per the methods described in Section 8.2.5. Prior to sampling, the flow-through

cell shall be removed and the samples collected directly from the purge tubing. Flow rates shall not be adjusted once aquifer conditions are met. Additionally, a period of no more than 2 hours shall elapse between purging and sampling to prevent groundwater interaction with the casing and atmosphere. This may not be possible with a slowly recharging well. Measure and record the water level prior to sampling in order to monitor drawdown when using low-flow techniques and gauge well volumes removed and recharged when using non-low-flow techniques.

Only use lab-provided, analyte-specific sample containers. When sampling for VOCs, sample containers are to be filled such that a positive meniscus forms on the top of the container with no overflow. No headspace may be present, which can be confirmed by tightly sealing the container and flipping it over. If a visible air bubble is present, add a small amount of the groundwater to the cap of the container and pour it gently onto the meniscus.

All samples are to be quickly placed into a cooler with ice. If samples are to be kept over several days, ice must be replenished as it melts, typically once a day.

Sampling equipment (e.g., especially bailers) shall never be dropped into the well, as this could cause aeration of the water upon impact. Additionally, the sampling methodology utilized shall allow for the collection of a groundwater sample in as undisturbed a condition as possible, minimizing the potential for volatilization or aeration. This includes minimizing agitation and aeration during transfer to sample containers, minimizing exposure to sunlight, and immediately placing the sample on ice once collected.

Sampling equipment shall be constructed of inert material. Equipment with neoprene fittings, polyvinyl chloride (PVC) bailers, Tygon® tubing, silicon rubber bladders, neoprene impellers, polyethylene, and Viton® are not acceptable when sampling for organics and PFAS. If bailers are used, an inert cable/chain (e.g., polypropylene string or stainless-steel wire or cable) shall be used to raise and lower the bailer. Dedicated equipment is highly recommended for all sampling programs.

Submersible Pump

The submersible pump must be specifically designed for groundwater sampling (i.e., pump composed of stainless steel and HDPE, sample discharge lines composed of HDPE) and must have a controller mechanism allowing the required low-flow rate. Adjust the pump rate so that flow is continuous and does not pulsate to avoid aeration and agitation within the sample discharge lines. Run the pump for several minutes at the low-flow rate used for sampling to ensure that the groundwater in the lines was obtained at the low-flow rate.

Bladder Pump

A gas-operated stainless steel bladder pump with adjustable flow control and equipped with a polyethylene bladder and HDPE tubing can be effectively utilized to collect a groundwater sample and is considered to be the best overall device for sampling inorganic and organic constituents. If only inorganics are being sampled, polyvinyl bladders and tubing may be used. Operate positive gas displacement bladder pumps in a continuous manner so that they minimize discharge pulsation that can aerate samples in the return tube or upon discharge.

When using a compressor, take several precautions. If the compressor is being powered by a gasoline generator, position the generator downwind of the well. Ground fault circuit interrupters (GFCIs) should always be used when using electric powered equipment. Do

not connect the compression hose from the compressor to the pump controller until after the engine has been started.

When all precautions are completed and the compressor has been started, connect the compression hose to the pump controller. Slowly adjust the control knobs to discharge water in the shortest amount of time while maintaining a near constant flow. This does not mean that the compressor must be set to discharge the water as hard as possible. The optimal setting is one that produces the largest volume of purge water per minute (not per purge cycle) while maintaining a near constant flow rate.

Prior to sampling, adjust the flow rate (purge rate) to yield 100 to 300 milliliters (mL) per minute. Avoid settings that produce pulsating streams of water instead of a steady stream if possible. Operate the pump at this low-flow rate for several minutes to ensure that drawdown is not occurring. At no time shall the sample flow rate exceed the flow rate used while purging.

For those samples requiring filtration, it is recommended to use an in-line high-capacity filter after all non-filtered samples have been collected.

Peristaltic Pump

A peristaltic pump is a type of positive displacement pump that moves water via the process of peristalsis. The pump uses a flexible hose fitted inside a circular pump casing. A rotor with cams compresses the flexible tube as the rotor turns, which forces the water to be pumped to move through the tube. In peristaltic pumps, no moving parts of the pump are in contact with the water being pumped. Displacement is determined by tube size, so delivery rate can only be changed during operation by varying pump speed. Peristaltic pumps are simple and quite inexpensive for the flow rates they provide.

There are several methods available for transferring the sample into the laboratory containers. The selected method may vary based on state requirements and should be documented in the FSP. Samples typically can be collected directly from the discharge end of the HDPE tubing, after it has been disconnected from the flow through cell. For volatile analyses, the sampler should make sure that the pump is set such that a smooth laminar flow is achieved. In all cases, the project team should consult their local regulatory requirements and document the selected sample collection procedure in the project-specific Quality Assurance Project Plan (QAPP).

Bailer

A single- or double-check valve HDPE or stainless steel bailer equipped with a bottom discharging device can be utilized to collect groundwater samples. Bailers have a number of disadvantages, however, including a tendency to alter the chemistry of groundwater samples due to degassing, volatilization, and aeration; the possibility of creating high groundwater entrance velocities; differences in operator techniques resulting in variable samples; and difficulty in determining where in the water column the sample was collected. Therefore, use bailers for groundwater sampling only when other types of sampling devices cannot be utilized for technical, regulatory, or logistical reasons.

Dedicated or disposable bailers should always be used in order to eliminate the need for decontamination and to limit the potential of cross-contamination. Each time the bailer is lowered to the water table, lower it in such a way as to minimize disturbance and aeration of the water column within the well.

8.2.7 Sample Handling and Preservation

Many of the chemical constituents and physiochemical parameters to be measured or evaluated during groundwater monitoring programs are chemically unstable and require preservation. The U.S. Environmental Protection Agency (EPA) document entitled *Test Methods for Evaluating Solid Waste – Physical/Chemical Methods (SW-846)* (EPA 1997) includes a discussion of appropriate sample preservation procedures. In addition, SW-846 provides guidance on the types of sample containers to use for each constituent or common set of parameters. In general, check with specific laboratory or state requirements prior to obtaining field samples. In many cases, the laboratory will supply the necessary sample bottles and required preservatives. In some cases, **Field Sampling Personnel** may add preservatives in the field.

Improper sample handling may alter the analytical results of the sample. Therefore, transfer samples in the field from the sampling equipment directly into the container that has been prepared specifically for that analysis or set of compatible parameters as described in the project-specific FSP. It is not an acceptable practice for samples to be composited in a common container in the field and then split in the laboratory or poured first into a wide-mouth container and then transferred into smaller containers.

Collect groundwater samples and place them in their proper containers in the order of decreasing volatility and increasing stability. A preferred collection order for some common groundwater parameters is:

1. VOCs and total organic halogens (TOX)
2. Dissolved gases, total organic carbon (TOC), total fuel hydrocarbons
3. Semivolatile organics, pesticides
4. Total metals, general minerals (unfiltered)
5. Dissolved metals, general minerals (filtered)
6. Phenols
7. Cyanide
8. Sulfate and chloride
9. Nitrate and ammonia
10. Radionuclides

When sampling for VOCs, collect water samples in vials or containers specifically designed to prevent loss of VOCs from the sample. The analytical laboratory performing the analysis shall provide these vials. Collect groundwater from the sampling device in vials by allowing the groundwater to slowly flow along the sides of the vial. Sampling equipment shall not touch the interior of the vial. Fill the vial above the top of the vial to form a positive meniscus with no overflow. No headspace shall be present in the sample container once the container has been capped. This can be checked by inverting the bottle once the sample is collected and tapping the side of the vial to dislodge air bubbles. Sometimes it is not possible to collect a sample without air bubbles, particularly water that has high concentrations of dissolved gases. In these cases, the **Field Sampling Personnel** shall document the occurrence in the field logbook and/or sampling worksheet at the time the sample was collected. Likewise, the analytical laboratory shall note in the laboratory analysis reports any headspace in the sample container(s) at the time of receipt by the laboratory.

8.2.7.1 Special Handling Considerations

In general, samples for organic analyses should not be filtered. However, high turbidity samples for polychlorinated biphenyl (PCB) analysis may require filtering. Consult the project-specific QAPP for details on filtering requirements. Samples shall not be transferred from one container to another because this could cause aeration or a loss of organic material onto the walls of the container. TOX and TOC samples should be handled in the same manner as VOC samples.

When collecting total and dissolved metals samples, the samples should be collected sequentially. The total metals sample is collected from the pump unfiltered. The dissolved metals sample is collected after filtering with a 0.45-micron membrane in-line filter. Allow at least 500 mL of effluent to flow through the filter prior to sampling to ensure that the filter is thoroughly wetted and seated in the filter capsule. If required by the project-specific QAPP, include a filter blank for each lot of filters used and always record the lot number of the filters.

Because there is some evidence that PFOS may sorb onto glass fiber filters, it is preferred not to filter samples for PFAS analysis in the field or laboratory. Field filtration is generally prohibited unless specifically requested by a client. If filtering is required by client's and regulatory agency's request, it is recommended that the following be considered and discussed with the client and regulatory agency:

- Evaluate if filtered results are meaningful, and, therefore, if filtering in the field or laboratory is required;
- Consider use of low-flow sampling in the field to reduce the need for sample filtering;
- Consider use of a centrifuge in the laboratory to reduce the need for sample filtering; and
- If filtering is required, determine the nature of the filters used and do not use glass fiber filters.

8.2.7.2 Field Sampling Preservation

Preserve samples immediately upon collection. Ideally, sampling containers will be pre-preserved with a known concentration and volume of preservative. Certain matrices that have alkaline pH (greater than 7) may require more preservative than is typically required. An early assessment of preservation techniques, such as the use of pH strips after initial preservation, may therefore be appropriate. Guidance for the preservation of environmental samples can be found in the U.S. EPA *Handbook for Sampling and Sample Preservation of Water and Wastewater* (EPA 1982). Additional guidance can be found in other U.S. EPA documents (EPA 1992, 1996).

8.2.7.3 Field Sampling Log

A groundwater sampling log provided as Attachment 1 shall document the following:

- Identification of well
- Well depth
- Static water level depth and measurement technique
- Presence of immiscible layers and detection method
- Well yield
- Purge volume and pumping rate

- Time that the well was purged
- Sample identification numbers
- Well evacuation procedure/equipment
- Sample withdrawal procedure/equipment
- Date and time of collection
- Types of sample containers used
- Preservative(s) used
- Parameters requested for analysis
- Field analysis data
- Field observations on sampling event
- Name of sampler
- Weather conditions

9.0 Quality Control and Assurance

9.1 **Field Personnel** will follow specific quality assurance (QA) guidelines as outlined in the project-specific FSP. The goal of the QA program should be to ensure precision, accuracy, representativeness, completeness, and comparability in the project sampling program.

9.2 Quality control (QC) requirements for sample collection are dependent on project-specific sampling objectives. The project-specific FSP will provide requirements for sample preservation and holding times, container types, and sample packaging and shipment, as well as requirements for the collection of various QC samples such as trip blanks, field blanks, equipment rinse blanks, and field duplicate samples.

10.0 Data and Records Management

10.1 Records will be maintained in accordance with SOP 3-03, *Recordkeeping, Sample Labelling, and Chain-of-Custody*. Various forms are required to ensure that adequate documentation is made of the sample collection activities. These forms may include:

- Sample Collection Records;
- Non-water repellent field logbook;
- COC forms; and
- Shipping labels.

10.2 Sample collection records (Attachment 1) will provide descriptive information for the purging process and the samples collected at each monitoring well.

10.3 The field logbook is kept as a general log of activities and should not be used in place of the sample collection record.

10.4 COC forms are transmitted with the samples to the laboratory for sample tracking purposes.

11.0 Attachments or References

Attachment 1 – Groundwater Sampling Collection Record

ASTM Standard D5088. 2008. *Standard Practice for Decontamination of Field Equipment Used at Waste Sites.* ASTM International, West Conshohocken, PA. 2008. DOI: 10.1520/D5088-02R08. www.astm.org.

EPA (Environmental Protection Agency, United States). 1982. *Handbook for Sampling and Sample Preservation of Water and Wastewater.* EPA-600/4-82-029. Cincinnati: EPA Office of Research and Development, Environmental Monitoring and Support Laboratory.

EPA. 1992. *RCRA Groundwater Monitoring Draft Technical Guidance*. EPA/530/R-93/001. Office of Solid Waste. November.

EPA. 1996. *Ground Water Issue: Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*. EPA/540/S-95/504. Office of Solid Waste and Emergency Response. April.

EPA. 1997. *Test Methods for Evaluating Solid Waste, Physical/Chemical Method (SW-846)*. 3rd ed., Final Update IIIA. Office of Solid Waste. Online updates at: http://www.epa.gov/epaoswer/hazwaste/test/new-meth.htm.

SOP 3-03, *Recordkeeping, Sample Labelling, and Chain-of-Custody*.

Author	Reviewer	Revisions (Technical or Editorial)
Mark Kromis Program Chemist	Chris Barr Program Quality Manager	Rev 0 – Initial Issue (May 2012)
Ken O'Donnell, PG Geologist	Claire Mitchell, PE, PMP Senior Engineer	Rev 1 – PFAS sampling update (July 2019)
Rose Kelley, Environmental Scientist	Richard Purdy, Project Scientist	Rev 2 – Update & Review (June 2022)
Alex McLean, Geologist	Jennifer Ray, Environmental Engineering	Rev 3 – Update & Review (February 2025)

Attachment 1
Groundwater Sample Collection Record

Well ID:

Groundwater Sample Collection Record

Client: _____ Date: _____ Time: Start _____ am/pm
Project No: _____ Finish _____ am/pm
Site Location: _____
Weather Conds: _____ Collector(s): _____

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length _____ c. Length of Water Column _____ (a-b)
   b. Water Table Depth _____ d. Calculated Well Volume (see back) _____
   Casing Diameter/Material _____

2. **WELL PURGEABLE DATA**
   a. Purge Method: _____
   b. Acceptance Criteria defined (see SAP or Work Plan)
   - Minimum Required Purge Volume (@ _____ well volumes) _____
   - Maximum Allowable Turbidity _____ NTUs
   - Stabilization of parameters _____ %

   c. Field Testing Equipment used: Make _____ Model _____ Serial Number _____

Time (min)	Volume Removed (gal)	Temp. (°C)	pH s.u.	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (m)	Color/Odor/etc.

   d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	☐	☐	☐
Has required turbidity been reached	☐	☐	☐
Have parameters stabilized	☐	☐	☐

   If no or N/A - Explain below.

(continued on back)

3. **SAMPLE COLLECTION:** Method: _____

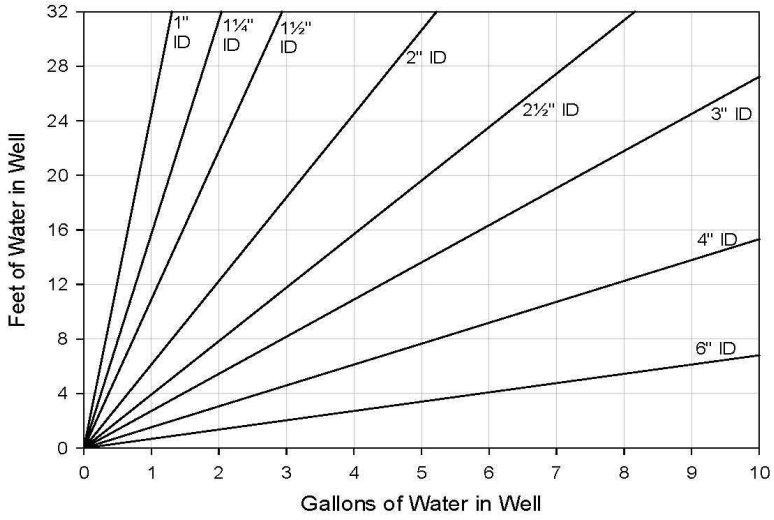
Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time

Comments _____

Signature _____ Date _____

Purge Volume Computation

Well ID:



Volume / Linear Ft. of Pipe		
ID (in)	**Gallon**	**Liter**
¼	0.0025	0.0097
3/8	0.0057	0.0217
½	0.0102	0.0386
¾	0.0229	0.0869
1	0.0408	0.1544
1¼	0.0637	0.2413
1½	0.0918	0.3475
2	0.1632	0.6178
2½	0.2550	0.9653
3	0.3672	1.3900
4	0.6528	2.4711
6	1.4688	5.5600

(continued from front)

Time (min)	Volume Removed (gal)	Temp. (°C)	pH s.u.	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (m)	Color/Odor/etc.

Signature _____ Date _____

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